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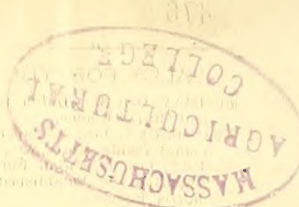
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THE DAUGHTERS OF THE YEAR. JUNE.

THE year loves its daughters, and they garland themselves to please their sire. Not to please us, as in our self-centring consequence we are apt to think. "For Thy pleasure they were created," was the confession of the adoring twenty-four.

"The summer flower is to the summer sweet,
Though to itself it only live and die ;"

was Shakespeare's floral creed. Of its progeny, June is favourite, and she repays parental preference. No month is so flush in colouring, so varied in fecundity of production, so persistent in glory to the end. July has its specialties, of Sweet Peas, Carnations, Delphinium, Poppies, Lilies; but its opening joys are June's bequests, and its close brings rueful hints from past and fallen bloom. Nor does my long Corycian experience recall a June like this. I do not mean in climate, for it opened miserably, and has been crossed by waves of cold; but in the tropical vigour of its growth. Such tree blooms I never saw; such Chestnut pyramids, Sycamore tassels, ropes of Hawthorn, foam-balls of Gueldres Rose, "Laburnum rich in streaming gold." So, too, with the shrubs: Weigela, red and white; Spiraea and Veronica, Philadelphia coronaria and grandiflora; while not a few herbaceous plants, stunted and sparsely-flowering in former years, rise in this June full, profuse, and tall.

I own to an annual pang in discarding the exhausted double Wallflowers, so serviceable as they have been, so noble in colouring and stature, so Triton-like among the minnows of May; it seems impious to cast them out, like Jeremy Taylor's withered Rose, into the portion of weeds and worn-out faces. The best of them grew on either side our door in raised beds, from which two noble clipped Pyracanthi, just now in bloom, ascend to the upper windows. They went to the rubbish-heap in the month's first week, and in their place is a backing of early autumn Chrysanthemums, then stately water-loving Cardinals, rearing their cupreous foliage amid thickly-planted Pelargoniums, edged with blue Lobelias and ivy-leaved Pelargoniums, falling over the sustaining cork-clad boards. It is the only approach to bedding-out which I permit, appropriate so near the house, and brilliant till October frost. It leaves a fortnight of comparative bareness, but that is overlooked in the splendour of the herbaceous border opposite. My charming contemporary, "E. V. B.," used to anathematise the word—I know not why; it tells the truth with me. My long, wide borders show only herbs, plants which die down in winter, go, as George Herbert says—

To see their mother root when they have blown,
Where they together
All the hard weather,
Dead to the world keep house alone.

Each morning when I throw up my bedroom window I look down upon them with a cry of pleasure. The dominant colours are yellow, Doronicum and Hemerocallis; purple, Geranium ibericum and Veronica amethystina; coral-red, Centranthus; orange, Papaver hirsutum; white, Pyrethrum, and tumbling masses of the common Pink. Intermediate tones are due to Dame's Violet, lingering Aubrietia, Limnanthes, pink Pyrethrum. From a Grindelwald valley comes tall Pyrenean Valerian, too soon o'erblown, but seeding freely; hard by it is a squad of Oriental Poppies, their great scarlet and black blossoms leaning forward arrestingly to look us in the face. Flanking that again, dependent on daily watering in all but wettest weather, is a great bush of Spiraea Aruncus with flower-spikes 2 feet long. Scarlet Geums, and even lovelier Potentillas, yellow without and blood-red within, sparkle through the greenery; while florally most interesting of all is Morina longifolia, with lustrous thistle leaves, Acanthus-like flower stem, spiny bracts and nearly fourscore protruding tubular florets, white on the day they open, changing then to crimson. From Cowper's Olney greenhouse-border, I have brought a profusion of his favourite "grass Pinks," which, as he tells William Unwin on June 8, 1783, distracted his attention from the letter he was writing to his friend. Many of these are on the wane as June goes out, but there are plenty more to take up the wondrous tale and beautify the July record.

In the side walks are the vivid Italian Alkanet, the curious Vincetoxicum, its small puce-coloured florets, so inconspicuous to the naked eye, so exquisite beneath a 3-inch lens; Phytolacca from the Burgundy vineyards, where its black berries are crushed to colour the wine; Bupthalmum, Grimm the Collier (Hieracium aurantiacum), Genista sagittalis, Campanula Trachelium and glomerata, phosphorus-scented Dittany, "gold-dusted Snapdragon," Devil-in-a-bush blue and white, lovely Bartonia aurea, all backed by Foxgloves, red,

white, yellow, with at present only a single specimen of the Digitalis lutea. Supported by Rose-trees, dwarf and standard, is the Birthwort, Aristolochia clematidis. I took it up at Godstow, where it is a weed, introduced centuries ago from Italy by the nuns, who used it medicinally. It is one of three or four plants—Bocconia is another—which insist on choosing their own corner in a garden. Plant them arbitrarily, they pine and die; humour them where they come up unexpectedly, and they flourish like a green Bay-tree. Deference to this caprice has filled for me a most unlikely corner with a mass of Impatiens parviflora. I brought it forty years ago from the Oxford Physic Garden, where it abounded close to dear old Dr. Daubeney's door. Last year, to my surprise, I found it growing all along the banks of the little river Tyne, which washes the quaint Scottish town of Haddington. An "escape," say botanists undoubtingly. Whence and how escaped is often an insoluble puzzle.

Under my study-window is a rock-bed, built with glacial erratics from the North of England, which fill our boulder clay. Here are Nottingham Catch-fly, Dianthus caesus, from Cheddar; D. caryophyllus from Rochester Castle, London Pride, Asarum, with its hidden purple bells, the scentless but ever-blooming white Canadian violet, feathery racemes of Heuchera sanguinea, four kinds of Oxalis red and yellow. Here too is the not common Claytonia perfoliata, grown in clumps, among which I planted some purple mountain Pansy from Langdale—an inspired thought to judge from the "how lovely" of those who see them together. It fades early in June, when I remove all but a seeding remnant, and replace with Stocks. Here lastly, hiding a rough corner, is Senecio squalidus, a foreigner rarely seen in England. It grows thickly on the middle belt in the ascent of Etna, whence it was brought to Oxford by John Sibthorp, in 1784. Planted there, it spread over the town, covered and still covers, every buttress and coign of vantage. A plant sent to Cambridge established itself in all the college buildings there; carried to Taunton in 1865, it clothed the ancient Grammar School and Castle.

Many years ago, when Plancus was consul, showing Oxford to some 400 Birmingham artisans, I called their attention to it, and told its story. From a small piece of waste ground they eagerly dug up roots and took them home to plant. Months afterwards, haunting the poorer streets—not slums, for there are no slums in sanitary well-governed Birmingham, I found it flourishing in many a window-box and small back court. Its name they had all forgotten, but with a droll half-remembrance, had twisted my own name into a generic and specific title: they had called it —, but I must not say what, or I shall reveal the insignificant identity of *Corycius senex*.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CRISPUM LUCIANI.

MR. WARBURTON wishes us to say that the notice of the *O. crispum* Luciani, exhibited at the Manchester and North of England Orchid Society's meeting on June 5, held at the Botanical Gardens, was misleading. It says the flowers of this crispum are likewise small; the flower which I (Mr. Warburton) send you measures fully 3½ inches across after being cut for over a week, and it was on the plant six weeks previous. And further it goes on to say, that it is the same plant as exhibited and figured in the

Gard. Chron. of Dec. 9, 1899, which is not so; the one figured at this date was *Lindeni*, but through some mistake it got named *Mortebeckiense*, but was afterwards corrected in your later issue. *Lindeni* has dark chestnut-brown blotches, whilst those of *Luciani* are deep plum-purple, the difference being most remarkable and distinct in many ways. I also enclose you Macfarlane's paintings of both varieties for you to see and confirm. A. W.

FLOWERING SHRUBS.

PHILLYREA DECORA, *alias* *VILMORINEANA*.—This very distinct species of a long cultivated genus bids fair to become as useful as a flowering shrub as it is when considered as merely a foliage plant. During several weeks its stems have been wreathed thickly with its white, sweet-scented flowers, which, as well as being pretty while adorning the plant, are also very suitable for furnishing vases. I have treated *P. decora* somewhat differently from the other species with very small foliage, the chief beauty of which arises from their dense habit. The characteristic which distinguishes the species under discussion is its large and broad leaves, and to encourage size in these I have all along kept the bushes thin and open by means of cutting clean away all weakly shoots in the centres of growth. This has, I have no doubt, induced the plants to flower very profusely, as well as to produce ample and striking foliage, which, I may add, is rather better on plants growing in rich light soil than in that of a heavier nature.

PRUNUS TRILOBA, DOUBLE-FLOWERED VARIETY.

Cherries and Plums yield feasts of beauty in their season, and one is in some perplexity in deciding as to which is the best. It is perhaps wise not to choose! Of the small-growing kinds there is perhaps none more attractive than the one above-named. Its long, slender, flexile branches are at present studded with deep pink blossoms, which are most lovely. By a judicious use of the knife, the shoots may be caused to extend beyond the usual length, and it is therefore worth while examining the trees after the bloom is past, in order to cut out all weakly growths, and decaying points that may have suffered from late frosts. It is a species that naturally makes but slight growth, and therefore while the trees are young they should be helped with fresh soil and manure at the root, and be carefully pruned as above recommended.

STAPHYLEA COULOMBIERI.

This is obviously a variety of the well known *S. colchica*, from which it differs in not being so floriferous, and the racemes of flower are more lax and longer, while the flowers themselves are slightly smaller. *S. Coulombieri* also expands its flowers a little in advance of the other. Both are well worth a place in the select shrubbery. They require no special culture.

CRATÆGUS SALICIFOLIUS.

This is, perhaps, more a tree than a shrub, and it is only when it attains to good-sized dimensions such as the fine specimen in the Royal Botanic Gardens, Edinburgh, has arrived at, that its value in pleasure-grounds can be fully determined. It is however not to be lightly passed over even when young, its grey foliage, its drooping branches, and at this time of year the trusses of large flowers with which it adorns itself, rendering it a conspicuous object.

PYRUS SPECIES.

Two allied plants deserve also a passing notice. The one, *Pyrus Malus floribunda*, being now smothered in red buds, or pretty pink-tinted blossoms. I encourage the formation of long shoots, which clothe themselves from base to tip with little clusters of bloom. The tree is best grown as a standard, and its fruit is, I should imagine, the tiniest Apple in existence, being about the size of the common Haw.

The other is *Pyrus Maulei*, of which I wish to

remark only that the bushes should be pruned, so as to induce very long shoots which, if well ripened, are abundantly furnished with flowers, and are more useful than short stems.

CYTISUS.

Among the shrubs that have for the first time experienced the rigour of a severe winter and emerged from it unscathed, I would like to mention *Cytisus elongatus*, on account of the distinct colour of its flowers. They are soft pink and yellow, produced very freely, and while I write, in course of expansion. B.

THE ROSARY.

THE BEGINNING OF THE ROSE SEASON.

ATMOSPHERIC conditions have been eminently favourable to the growth and floral development of Roses in Scotland during the month of June. On the other hand, as if Nature wished in characteristic fashion to modify this advantage, the earlier blooms have been, unless in strongly protected situations, greatly mutilated by violent south-west winds, and heavy thunder-rains. The weather, in other words, has for several weeks past been dominated by electricity, with the usual results. We have had, at long intervals, exceptionally beautiful days, but they were dreams of beauty "too bright to last;" a suspicion confirmed by subsequent saddening experience. At the present date (June 25), many of my finest climbing Roses growing on the walls of the manse, and visible from the study-window at which I am writing, bear evidence of their long struggle with the winds and the rains. In the garden, which is entirely sheltered from the force of southern blasts, less damage has been experienced, unless in the persistent "damping off" of many precious blooms. Among the first to suffer from this special infliction of Nature (who sometimes resembles a cruel, intemperate parent in her treatment of her fairest offspring), was that loveliest of all the Hybrid Tea Roses, *Clara Watson*, whose colour is as exquisite as its fragrance is refined. A Scottish rosarian of considerable reputation, who has occasionally gained the Gold Medal of the National Rose Society, has frequently told me that he cannot grow *Clara Watson* to any advantage, a statement which, I confess, surprises me greatly, for I have frequently had it 6 inches in diameter, of superb form and colour. I have, indeed, no grander Rose in my garden. In the leading catalogues its value is decidedly under-estimated; but perhaps it is less successful in England than in southern Scotland, where we have more coolness and moisture during the exacting summer season—atmospheric influences which in many instances are essential for commanding floral results. I find that during an exceptionally hot season, when the sun is an absolute tyrant, creating and consuming with that power, even such consummate Roses as *Clara Watson* and *Margaret Dickson*, not to speak of *A. K. Williams*, *Duke of Edinburgh*, and *Charles Lefebvre*, are too suddenly forced open in the centre, and do not last very long. A comparatively cool season, according to my own experience, suits most Roses best. And though we may have occasionally too much rain for the conservation, even for a short period, of the beauty and almost perfect symmetry of the flowers, yet it cannot be questioned that this element is of primary importance, as I have already suggested, for what may be termed their adequate evolution. I am strongly of opinion that the formation of the flowers (often very imperfect, especially in the centre, in a sultry, showerless June), is much less dependent on the sunlight than the rain. I have been in former years impressed by the conviction that such varieties as the crimson Hybrid Perpetuals *A. K. Williams*, and others of similar character, to which I have referred, almost invariably come with hardened, abortive flower buds, on which a

strong sun has no influence, unless in the direction of still farther hardening and blackening, till the beneficent rains of summer have come, dropping, like mercy, as depicted by Shakespeare, "upon the place beneath." Very often, therefore, in the beginning of the season, if showers are not forthcoming, and electric influences universally prevail, withering rather than inspiring the great sources of vegetation, the first flowers of the Rose, the queen of the garden, for which we have waited so patiently and looked so eagerly, are lamentable miscarriages; a characteristic, however, much more expressive of the Hybrid Perpetuals, whose petals being closely compacted, are somewhat obdurate and arduous of expansion, than of the more freely flowering Hybrid Teas. Of the latter, many of the fairest forms, such, for example, as *Viscountess Folkestone* (raised like *Clara Watson* by the late Mr. Henry Bennet, though the latter was introduced and popularised by Mr. George Prince); also *Grace Darling*, *Margaret Dickson*—essentially a Hybrid Tea, *White Lady* and *Papa Gontier*; the variety last mentioned being one of the finest of French introduction. *Fiametta Nabonnand*, one of whose parents was *Niphetos*, and *Madame Pernet Ducher*, already are in flower. These have opened with great facility since the advent of the rain; which, however, as I have stated on the opening lines of this contribution, has during the last week been destructive of the blooms. But even as I write, the sun is bursting through the long earth-darkening clouds; the force of the wind, so desolating yesterday to my fairest climbing Roses, has gradually subsided; the garden and its green environments of lawn and woodland are assuming another and brighter aspect; the voice of the ring-dove, so emblematic of passion, yet so strangely tranquillising, is heard in the woods. Ere long our hearts will echo instinctively the tenderly beautiful words of that almost forgotten, yet nobly-gifted singer, *Alexander Smith*:—

"Daisies are white upon the churchyard sod,
Sweet thoughts the clouds lean down and give;
The world is very lovely, O my God,
I thank Thee that I live!"

David R. Williamson.

ITALIAN GARDENS.

PALERMO.—Anyone can see at a glance, looking round on the vegetation of Palermo, what a favoured portion of the earth it is. Professor Borzi told me, when, as a stranger, I was walking round the garden with him, that he had long wished that it could be an international garden—that is to say, the climate and soil were so propitious for growing great varieties of trees and plants that it seemed the very spot to receive new species as they were discovered, and sent out to be started and established there, and from thence to be distributed to the various gardens and stations of Europe, Asia, and America, where there was a likely chance of their thriving either in the open air or under glass. He appeared to have at different times received consignments from the Cape and other parts of Africa, also from New Zealand, and the islands of the Southern Ocean, and a very great variety under his care. He said the pay allowed for the botanic garden was but small, and that the Italians were apathetic as to real gardening. They liked to stroll about and take pinches of seed, but had no feeling for what we should call an interesting garden, such, for instance, as Mr. Hanbury's at La Mortola, and many far less pretentious ones scattered over England. Signor Borzi is certainly an enthusiast, and has his heart in his work; but neither the King nor the Queen of Italy appears to have visited the Botanic Gardens at Palermo during their visits there. Last year he asked the Prince of Naples to come and look over it, but the Prince regretted he had not the time to do so.

The King of the Belgians seems to be the only foreign potentate who has taken an interest in it. It makes me sad and sorry to see a person so desirous of forwarding the true interests of horticulture,

both as to trees and plants, with his hands tied, as it were, and no means at his disposal for carrying out his laudable project.

One of the severest storms that has swept over Palermo for some years occurred when I was there, and a very fine and uncommon *Planera* had been blown down. He was in great grief about it. I suppose its roots were of the treacherous sort that its relative the Elm has.

He had devoted one corner of the garden to Mexican plants, and called it his "Mexico," and was very pleased when he found I had recently been there and recognised my daily surroundings in that interesting region. He talks German well, but I do not think he knows English. It is a good thing he does talk German fluently, I think, as Germans abound in Sicily, and are most likely next

denizens of far off climates thrive and flourished. One does not feel tempted to sit under Palms in hot weather as one does under Oaks, and such beautiful Japanese and Indian and American Oaks can flourish in south Italy. There is a Palm mania there now, something like the Conifer mania half a century ago in England, when many of the beautiful new species were introduced by Douglas and others from India and America. I have seen a pamphlet written by a nobleman's gardener about the middle of the century actually saying that they meant to do away with such rubbish as Beech and Birch, and plant only Conifers. In a place not far from here, where the owner considered himself a great arboriculturist, his family complained to me that they had not a single tree, such as a good Lime, to sit under.

two young ones have had to succeed the original other two. The last of the giants is now in a ragged condition. I was glad to think I had secured formerly a photograph of them, when in better condition. The *Eriobotrya* has made a great change in the South Italian orchard landscapes. The trees are now a goodly size, and they are always crowded with the brilliant fruit. Never having happened to be in Rome before so late as the end of May or beginning of June, I had never seen the *Bignonia Tweediana* flourishing in the open air before. It is as beautiful and rich in colour as an *Allamanda*, and covered with blossoms. It is well for people fond of their gardens to remain belated in the South occasionally, as otherwise they can hardly realise the wonderful beauty of the flowers, especially those hanging over walls and arches. This summer there were refreshing rains, as well as brilliant sunshine, so garden scenery was at its very best. Besides the sheets of bloom in the Campagna of yellow, mauve, and pink—really acres of each hue—the old walls of the baths of Caracalla were decorated not only with green weeds, but also with lively blossoms.

In the well known cemetery at Rome, with its graceful Willows, I was glad to see they had plentifully planted our familiar Foxgloves. They were very fine, and seemed so suitably placed near graves, which were the resting-place of so many English. R.

FASCIATION.

FASCIATION in herbaceous stems is common enough, so much so that one rarely passes an *Asparagus*-bed without seeing one or more examples; but the same condition among roots is very rare. We have seen it in the aerial roots of some epiphytal Orchid—and now thanks to Mr. Justus Corderoy, we have had an opportunity of seeing it in a species of *Aloe*, which had long occupied its pot. The illustration (fig. 1) shows the appearance of the root, greatly reduced.

VEGETABLES.

ROSETTE COLEWORT.

It is somewhat strange that this delicious vegetable is so little cultivated in Scotland, while our neighbours in the sunny South make so much of it. From October till the New Year, I find it of great value, and it is always welcome at least once a day in the dining-room. I make two sowings, the first in the end of May, and the other ten days or a fortnight later. When the seedlings are large enough to transplant, they are put out at a foot apart each way in a bit of good soil, so that, with the exception of Little Pixie Cabbage, which is less useful, no vegetable of its class requires less room to produce a given crop.

SCOTCH KALE.

This hardy variety is valuable largely on account of its continuing to supply useful shoots later than any other of the Brassicas, with the single exception of Broccoli. There are varying methods of cultivating this vegetable: some persons sowing in the autumn and transplanting in the spring, and others sow in the spring and plant out into quarters in June and July. By both of these methods a long occupation of the ground is entailed, and nothing more is gained than can be secured by sowing at the end of the month of May, when it becomes a catch-crop that follows an earlier one. This Kale requires a sharp frost to make it tender eating and give it a delicious flavour, and in any case it is not wanted until mid-winter, when Savoy and late Cabbages are getting scarce. Like most of the family, Kales delight in a rich soil, though it conduces to their power of resisting successive hard frosts and sudden thaws, which test to the utmost all kinds of winter stuff, if the manure is kept near the surface in digging, and the ground, after having been thoroughly broken up, made firm by foot-trampling it. Moreover, in April, when the old plants come to be



FIG. 1.—FASCIATED ROOTS OF ALOE. (REDUCED TWO-THIRDS.)

to the English to take a keen interest in botanical specimens. He told me that the yellow *Oxalis cernua* which now literally carpets all the fields and waysides of Sicily and parts of southern Italy, originally came by chance in a tiny piece from the Cape, along with a consignment of plants. I should suppose that now it must be a plague to the Sicilian farmers to eradicate.

It is surely a great pity that the private gardens in Sicily, and southern Italy, and the Riviera, are now being spoilt with planting far too many Palms. "Collections" of Palms are anything but beautiful altogether. One striking Palm here and there, and say three, or even five, now and then in a group tell happily and well; but many of the most admired and vaunted private gardens of Palermo seemed to me *manqué* as to pleasant garden effects, though they certainly were, as the tourists said "wonderful," I mean in the way in which these

ROME.—In the beautiful garden plot within the cloisters of the Lateran, I was grieved to see the other day how it was changed from what I remember it formerly. Orange-trees and spicy shrubs have been replaced by Palms, a few of which would have added points of interest, but the fresh greenery has mostly and too much departed. Fortunately, in the new Museo Nazionale, where the extensive cloisters are the lovely ones designed by Michael Angelo, far better gardening has prevailed. Indeed, nothing could be lovelier. The old sarcophagi scattered about the centre open part are wreathed with the luxuriant trailing branches of all manner of exquisite Roses and many suitable flowering shrubs with sweet scents, and backed by Box—so fragrant in a warm climate, are all that could be wished. Of the four celebrated Cypress trees left of Michael Angelo's planting, one only remains, one was killed last year by lightning, and

lifted to make way for another crop, they move with nice balls of fibrous roots; an operation which, when the plants are layered-in in a shaded position, delays the production of flowering growths for some weeks. There is a striking diversity in the appearance of different strains, and more particularly in the extent to which the leaves are crested or curled, some (bad strains) being nearly plain, and others (the best) nearly as finely subdivided as a good strain of Parsley. The latter should always be chosen as producing the greatest quantity of material, and also because of its superior quality when prepared for the table.

I was very much struck with a strain of variegated Kale exhibited by Messrs. Storie of Dundee, in Edinburgh last spring, in which the greater part of the leaf was a dull white, with the crimped edgings green. At one time variegated "greens" were somewhat popular. I have known them grown to supply material to set up fruit with during winter and spring, and the late Miss Frances Hope, of Trinity, cultivated a variety of kinds for filling up her beds and borders during the winter season. The different sorts were rigidly isolated while in flower by means of fine muslin covers, and the colours were in this way kept true to character. But none of Miss Hope's Kale were anything like so pretty as the "Albino" strain of Messrs. Storie & Storie, which have a something about them that, if one may use the word in connection with a vegetable, may be termed refined. *B.*

EARLY CAULIFLOWERS.

Rarely have early Cauliflowers been more appreciated at Syon than this year, owing to our losses in Broccolis and spring Cabbages. As regards the cultivation of Cauliflowers, it will suffice briefly to indicate the earliest varieties, and how best to grow them. The time to sow seeds of Cauliflowers to stand the winter will soon arrive, as with the best methods a period of some months is required before heads can be cut fit for the table. Whether pots, pits, cold frames, or temporary sashes be employed, does not matter much. No great amount of success results from forcing, for although it may be employed at the finish, the plants usually bolt or button if it be afforded before the heads are fairly formed. Still, there are varieties which may be slightly forced, viz., Veitch's Early Forcing, and Sutton's First Crop, capital varieties for growing in pots or otherwise; which, when raised from seeds sown in the autumn, furnish heads in mild seasons early in the month of May. There can scarcely be any doubt about the superior quality of Cauliflowers raised from sowings made in the autumn over those raised early in the year, say January and February; the heads are compact and firm, which is not always the case with the latter, which are afforded heat from start. Still whatever practice be followed, if heads are produced they are of value in the spring months. Some gardeners lacking frames and hand-glasses, must perforce depend on winter sowings for the supply of early Cauliflowers, and to such as these varieties that will bear a certain amount of forcing are of great service.

For many years reliance was had at Syon on the old varieties Early London and Walcheren, for spring supplies; but I now grow largely the two varieties above mentioned as well, there being a gain of ten to fourteen days thereby, a matter of importance to me and most gardeners. It may be of interest to readers of the *Gardeners' Chronicle*, if I give the dates of cutting the four varieties named. From plants grown in pots in rough structures made with spare frame sashes and turf or boarded sides, Early Forcing and First Crop produced heads fit for cutting on May 10. The same variety, wintered in pots and frames, and likewise planted out-of-doors, were three weeks behind these, no heads being fit till June 4, and those of Early Forcing planted at the foot of a south wall. If this date be not particularly early, it is still much earlier than heads could be cut from

Early London, which was not fit for cutting till June 15. The season is unusually late, for although growth in April was fairly active, severe frosts in May crippled many kinds of plants, and made it one of the latest seasons on record. The worst of such a season is, that the plants come in altogether if only a variety or two be grown. Even with winter sowings to help us, heads were later than usual in turning in.

I think gardeners should grow more of these dwarf and early varieties of Cauliflower. Sow the seeds in the middle of the month of August for affording the earliest heads, wintering the plants in cold pits, frames, or hand-glasses; and in early spring planting them out in warm situations, and potting others for growing on under glass. In the case of those planted under hand-lights, it suffices to remove all but four per hand-light, which may remain to form heads, these being moulded up with soil from the alleys when they are about half-grown. [Some heads of the new varieties Mr. Wythes names accompanied this communication, of medium size, perfectly white and firm in the curd, and of fine mild flavour. *Ed.*]

In the extreme south of the country, about the 25th would be a more suitable date for sowing the seeds. The cooler the plants are grown the better they will stand the rigour of winter, and for this reason air should be afforded at all times when there is no frost, and to enable this to be done, the frames, hand-lights, &c., should face the south. I have potted the plants in 6-inch pots in November, and plunged them in beds of coal-ashes under glass. In this case only strong plants were taken, the small ones being put into 60's, and re-potted in the month of March following. It is prudent to prick out a number of the autumn-raised plants in February or March. Early London and Walcheren, if sown at the same date as the others, continue the supply.

It is needless to say that, however cultivated, the soil must be rich in nitrogenous food, if the best results are to be looked for in the cultivation of the Cauliflower; and in the case of those grown in pots, mild liquid-manure does a great deal of good. *G. Wythes.*

KALES.

The various Kales, which we grow in quantity, were particularly serviceable this year, Cabbage being late in becoming fit for use. The sprouting Broccoli is a homely and useful spring vegetable, very nice eating when properly cooked. The late Purple Sprouting is one of the best of spring vegetables, and the plant is very productive. But about the Kales, as gardeners know, preparations must be made nearly twelve months in advance, and the seed of Kales is sown in May; the practice of sowing earlier and leaving the plants to starve in the seed-beds, is not the way to obtain strong plants or good returns, for the plants, to do them justice, should be sturdy and strong, and therefore they must not be crowded in the seed-beds, as this leads to etiolation. As regards planting, a good deal depends upon locality, kind of soil, and the varieties planted; most Kales, if planted early, may be had fit for use in about six months, but to use them up before the end of the year is not a judicious practice, the hardest weather being still ahead of us, and we may find them of more use in the early spring. Of late years the broad-leaved Kales, and the very hardy Ragged Jack, have been diseased badly, whilst the Scotch curled varieties have not suffered at all. Strange to relate, the best variety of Scotch Kale called Reed's Hearting is very hardy, and not injured by frost, as one would suppose a Kale with a compact heart would be; and I do not know of a harder curled variety. It is planted largely at Syon for consumption in the spring months, and is the last to run to flower. When the head is taken, side shoots push forth and lengthen the supply; moreover, Reed's is one of the best in a wet or cold winter. Of Scotch Kales I prefer the dwarf variety, which having scarcely a stem exposed,

survives a hard winter that is fatal to the tall growing variety. Several types of the dwarf variety exist, but there is little trouble in getting the best one. The so called Extra Curled Scotch are handsome plants, and they are doubtless selections from the best dwarf type. They are worthy of being generally planted for early spring use. No note on Kales would be considered complete without referring to the Drumhead Kales, which resemble the Drumhead Cabbage. The leaves possess a large midrib, and which may be divested of the thin portion, and cooked and treated in the same manner as Asparagus. At Syon this Kale proved less hardy than some others; but a year's trial is not enough to allow me to speak definitely about it. I must give it another trial. It is nice-eating, and as a mid-winter vegetable it has its uses. Arctic Kale is a variety introduced a few years ago, and few Kales have given better returns.

Of the Purple and the Green Kales I prefer the latter, though it is merely a question of colour, both being equally good, and of remarkable hardness, the purple being less injured by severe frosts than the green. Both varieties need a good deal of space, and an open situation. Whenever possible, all Kales should be planted in June, or early this month, unless they have been pricked off into nurse-beds at a good distance apart. *G. Wythes.*

FORESTRY.

TIMBER-GROWING IN COPPICES.

SEEING that clean, straight timber is alone in demand at the present day, or at least that such timber can alone fetch the top price, it is not difficult to understand that a large proportion of the standards grown amongst coppice do not produce high-class timber, owing to their possessing wide and deep crowns, and comparatively short boles. It may be perfectly true that the very best Oak and Ash in the country have been, and are still, grown in coppice-woods; for when once the boles of these trees have been drawn up by side-shade, or pushed up by vigorous growth, the open order in which the trees stand, and the shading of the ground by the underwood, provide the best possible conditions for the rapid increase in diameter, growth-of-light-demanding species. But to obtain tall, straight boles of Oak or Ash in coppice-woods requires either the very best soil and situation, or an exercise of skill and care in raising them which cannot easily be given on many estates.

When first planted, say, with Oak and Ash standards, and Hazel for underwood, the latter does not grow much, if at all, faster than the Oak, and not so fast as the Ash, and the first crop of standards has as good a chance of succeeding as in an ordinary plantation. But later on, when the oldest standards shade the soil more or less between them, and the Hazel stools throw out strong, vigorous shoots, seedlings or young plants have little chance of growing into anything useful unless carefully watched and tended for several years; otherwise they become so weak and drawn that their value for timber is practically destroyed. Thus it is that the largest proportion of really good Oak timber produced in such woods originated with their formation, and only in good soils and situations do we find young Oak standards of a promising character which enable a succession to be kept up as it should be, and even on these a proper succession rarely exists.

GAME COVERTS AND SYLVICULTURE.

In the *Gardeners' Chronicle* of April 14, Professor Schlich gave a detailed description of a sylvicultural system ("Coppice with Standards"), which he considers well adapted to meet the requirements of pheasant preserving in British woods. This question of combining economic sylviculture and game-covert is, however, far from being satisfactorily answered by the recommendation of any particular system of sylviculture, for the simple reason that where game is preserved to any extent,

in nine out of every ten cases it takes precedence of the timber, and includes ground game as well as pheasants. Every estate forester knows perfectly well that whether proprietors favour the presence of rabbits in their woods or not, that keeper cannot be found who will keep the rabbits down sufficiently well to allow woods to be worked on an economical system. Rabbits provide sport, and however much the proprietor may object to the damage these animals do in theory, a good day's sport covers a multitude of keeper's sins in this respect, and many keepers know perfectly well they can laugh in their sleeve at any complaints made by the forester on this score.

Professor Schlich's opinion, that coppice with standards fulfils all the conditions necessary for good pheasant cover is well founded, for many thousands of acres of game-covert in the south and west of England are worked on this principle, and providing a certain proportion is cut at proper intervals, keepers are well satisfied with it.

shoots are any use for this purpose; and seedlings seldom escape the rabbits, or being smothered by rubbish, or the quicker-growing underwood. Ash is better able to hold its own for several seasons. Unlike the acorn, Ash-seed is not devoured by pheasants, pigeons, mice, &c. (which clear off a crop of acorns the winter following their fall), and seed-years with the Ash being fairly frequent, any favourable opportunity for germination always results in a crop of seedlings. Being a better shade-bearer than the Oak, it is less easily crushed out, and hence Ash saplings can always be found at each fall of underwood, the best of which can be left for standards. It is quite an exception, however, to find Oak standards much below the age of those originally planted, except such as have arisen from stool-shoots, or an occasional seedling which has escaped the dangers alluded to above.

The usual character of the older standards is a short stem of 15 to 25 feet, with a wide, branching crown, fit for little else but firewood.

fungus emerging through the stomata on the under surface of the leaf for the purpose of producing its conidia or reproductive bodies in the air, where they can be dispersed by wind. The fruiting branches form delicate olive-green patches on the under surface of the leaf; these originally isolated patches soon grow into each other, until in bad cases the entire surface of the leaf is covered. Corresponding patches on the upper surface of the leaf assume a brown or rusty tinge, and eventually the leaf turns yellow, and drops prematurely. When this loss of foliage occurs on a large scale, the fruit is arrested in its development, and also falls off at an early stage. In some instances, the young fruit is also attacked by the fungus.

Preventive measures.—Although admittedly a very destructive parasite when present in quantity, no serious attempt has been made to arrest its progress beyond the advice to collect and burn all diseased fallen leaves. Probably spraying would prove to be of service in checking the spread of the fungus if taken in time. The genus *Cercospora* contains about 250 species, all parasites, and in many instances good has resulted from the use of dilute Bordeaux Mixture. *Geo. Massee.*

NURSERY NOTES.

THE name of Mount is so much associated with Roses and with Canterbury, that it is difficult to think of him in any other connection. Nevertheless, the visitor to the Kentish coast will find that Mr. Mount is somewhat ubiquitous. His nursery at Folkestone is on the gault plain at the foot of the range of chalk hills which form so prominent a feature of this delightful town.

From a small fishing-town, Folkestone has grown in half-a-century to a large borough. The principal industry of the town is lodging-letting, and the quaint cottages of the fisher-folk are almost completely overshadowed by uninteresting rows of stucco erections, and palatial hotels of the first magnitude. There is not much gardening done, but these houses must be decorated by the florist, outside and in—outside, in the shape of window-boxes; inside, in the form of cut flowers and pot plants. It was with a view of seeing where the supplies came from that we visited Mr. Mount's Folkestone Nursery. The day was not propitious, for a storm was raging on and among the hills, giving them a magnificence of aspect beyond their wont, but rendering outdoor observations rather cursory. There are several ranges of low span-roofed pits, in which are grown Pelargoniums, Fuchsias, Marguerites, Tuberoses, the Harris Lily, and other plants, which furnish the staple of the decorations of the town. The Pelargoniums which are most in favour are Vesuvius, H. Jacoby, Raspail, and the new double-white Hermione, which is a great acquisition that does well anywhere, and when grown under glass, is excellent for cutting-purposes. The Ivy-leaf varieties are Madame Crousse, Souvenir de Charles Turner, and Bailey's Red, a very bright variety nearly the colour of Raspail. These, with Marguerites, render the numerous window-boxes of the town very gay.

Retinosporas grown in pots form most elegant dinner-table decorations, their fine foliage and glaucous colour being particularly attractive. The variety most grown seems to be *R. squarrosa*, but the appearance of these plants when grown under glass makes it difficult to recognise their identity with certainty. Palms, in the shape of Kentias and Latanias, do not seem quite to relish the sea air. Tomatos are grown in some quantities to meet the local demand. The sort most favoured is a great cropper, but devoid of name.

Out of doors are Roses—of course, dwarfs; hybrid perpetuals, hybrid Teas, and Teas, making strong growth, with healthy foliage and plenty of bloom. The reader may be spared an enumeration of sorts,



FIG. 2.—A FIG DISEASE: *CERCOSPORA BOLLEANA*.

- A, Fig-leaf badly infested with "rust," caused by *Cercospora Bolleana*.
B, Fruiting portion of the fungus emerging through a stoma of the leaf; $\times 400$.
C, Conidia of fungus; $\times 400$.

But the "coppice with standards" on most estates in this country, and that described by Professor Schlich, are two different things. In the latter, we have a proper succession of maiden standards or stems springing from young stools properly cut over; in the former, a very different state of things usually exists. Let me sketch a typical wood of the kind found in this district. The underwood consists of Hazel, with a sprinkling of Ash and Alder in damp spots. This is cut on a rotation of nine or ten years, for Hazel deteriorates in value after that period when used for hurdles or crate-wood, and the Ash and Alder are usually too thin on the ground to be worth considering by themselves. The standards are principally Oak and Ash, the former predominating in the older age classes, the latter in the younger. In many woods young Oak standards are almost entirely absent, and nearly all date from the planting of the wood. This is due to the fact that no standards are planted after the wood is first formed, the supply being simply kept up by leaving a few of the best stool-shoots, and any strong seedlings that have been able to get up. The Oak being cut in spring for barking, few stool-

The value of the underwood varies from 20s. to 60s. per acre, sold standing; but to make the latter sum, it must be fairly close to a good road, and the standards must be thin enough on the ground to allow it to grow straight and long. *A. C. F.*

(To be continued.)

A FIG DISEASE.

JUST half a century ago the celebrated German cryptogamist, Rabenhorst, described under the name of *Ascochyta caricae*, a minute fungus parasitic on living Fig-leaves. Since Rabenhorst's time the fungus has received several additional names, the latest, and from the present stand-point of knowledge the correct one, being *Cercospora Bolleana* (fig. 2).

The fungus appears to be widely distributed, and perhaps occurs wherever the Fig is grown. It is recorded from the entire Mediterranean region, Austria, has accompanied its host to the Argentine Republic, and is now said to be making itself far too prominent in this country.

The leaf is the part most generally attacked, the

as the thunder rattled along the cliffs, and the rain fell as it is in the habit of doing in thunder showers.

Herbaceous perennials for cutting purposes comprise Canterbury Bells, Spanish and English Irises, elegant, long-spurred, yellow Columbines (*Aquilegia*), Gaillardias, Delphinium, Eryngium, Oriental Poppies, and various other plants whose flowers, as is customary by the sea-side, have a richness of colouring unknown inland.

JAMES BACKHOUSE AND SON, LTD., YORK.

A VISITOR to York, after spending some time in admiration of the magnificent Minster, and in traversing the old city walls, finds but little display in the heart of the city. There are few squares, lofty buildings, or even wide streets.

York is an ancient city, and instead of seeking the display commonly made by more modern towns, has guarded its oldest features, and at present has "improved away" but very few of its narrow quaint-looking streets.

From the Minster it is a rather long but interesting walk to the nurseries of Messrs. Jas. Backhouse & Son, and few horticulturists visit York without making a call there, as did the present writer after representing the *Gardeners' Chronicle* at the Yorkshire Gala.

Like the city itself, the firm of Backhouse is of long standing. It was established in York in 1815 by the late James Backhouse, and in connection with the purchase of a business then belonging to Messrs. Telford, and more than a century old. The firm of Backhouse is represented at so many horticultural exhibitions by their well known displays of rockery and alpine plants, that one might suppose the greater part of the nurseries at York to be utilised in the cultivation of such-like species; this is not the case. Alpine plants are capitally represented there, the collection being one of remarkable comprehensiveness, and the rockeries are very pretty features of the nurseries, but they are not the only ones, for the area of 120 acres or so contains a most extensive collection of plants, indoors and out.

THE ORCHIDS.

There is a large and choice collection of Orchids, and in this department alone we saw many interesting plants. There are numerous glasshouses devoted to them, and they run left and right from a central passage, by which all in that block are connected with each other. How many *Odontoglossums* there were we do not know, but there appeared to be many thousands. One of the prettiest varieties of *O. crispum* in bloom had a magnificent spike of fourteen flowers, each of them large and spreading, with wide sepals and petals, and prettily marked.

Another variety with large brown spotting was also a valuable one, and suggestive of *O. c. Stevensii*. Most of the other *O. crispums* in flower were of considerable merit; they included none of the star-like type with narrow petals. *O. Pescatorei* made quite a show, and amongst these were varieties with spotted flowers, some of which may be expected to vary very considerably another year. But upon one particular variety, the flowers have a less common type of spotting, the spots being very small and rather close together. Mr. Jas. Backhouse has an idea that in this case the spotting may be more constant than it is generally in *O. Pescatorei*, but this must be proved or disproved when the plant blooms a second time. We noticed a good *Oncidium* in *O. sarcodes pardalinum*, capital in colour, with much spotted lip.

Amongst a batch of plants of *Cattleya citrina* was remarked the wholly yellow form, the flowers having no white upon the lip. *Laelias* and *Cattleyas* there were in abundance, in good health, and inclusive of valuable varieties and hybrids. Particularly choice was a hybrid between *C. Mossiae* and *Laelia tenebrosa*, remarkable for its richly-coloured lip, with silvery fimbriated margins. Other hybrids from *L. tenebrosa* were also of much merit. Some

very fine forms of *Cattleya Mossiae* and *C. Mendeli* were in flower, including a tinted variety of *C. Mendeli*, named *grandiflora*, with wide sepals and petals, the petals almost erect, and therefore the more effective.

There was quite a large group of plants of white flowering varieties of *Laelia anceps*, and though not blooming at the moment they had every appearance of vigour. *Cypripedium insigne* Sandere with eight growths, and of the true type, showing white at the extremes of the petals; a hybrid *Dendrobium* from *D. thyrsiflorum* and *D. nobile*; *D. nobile album*, or *Amesiae*, as it has been known, and a considerable batch of *Disa Veitchii*, were some of the many Orchids that attracted attention—but the whole collection is an extensive one, and possesses many uncommon hybrids and varieties.

THE FERNERIES.

Before leaving one of the Orchid-houses, our attention was drawn to a magnificent plant of the Stag's Horn Fern (*Platycerium grande*), seldom seen in such a vigorous condition, and with fertile fronds. This was a kind of introduction to a large number of choice Ferns seen subsequently in several permanent ferneries, and in ordinary glass-houses. The almost cool fernery above-ground is a very pleasant retreat indeed, and is built inside in such a manner that little is seen at one time, whilst the waterfall of 10 feet deep is an unusually interesting one. There are fine plants of *Dicksonia antarctica* and others; also of *Cyathea dealbata* and *C. Smithii*, with good heads; and underneath them *Todeas superba*, *intermedia*, *hymenophylloides* (*pellucida*), &c., and other less tall-growing species. The stonework is screened by various *Adiantums* and other Ferns, among them being the little bead-plant, *Nertera depressa*, as well as some of the less tender species of filmy Ferns.

It is in a pit, however, with a division through it, and therefore having warm and cool temperatures, that the general collection of filmies may be seen, and it is a feature that very few nursery establishments possess in such degree. There are few collections of such beautiful and rare varieties. We cannot now give a list of the beautiful forms included there, even were it desirable, but lovers of one of the most attractive sections of Ferns would find a great deal to interest them. *Trichomanes radicans* (Killarney Fern) was capitally represented, and by its best varieties, *T. r. Luschnathianum* and *T. r. L. pulchrum* and *prælongum* being particularly noticeable. The *Hymenophyllums*, too, were charming, especially the *H. lineare*, of which there was an extra sized specimen, and of which with condensed moisture upon it had used to be described by the late James Backhouse as "Golden Dew-drops." *H. demissum* and its variety *nitens*, and *H. caudiculatum* were also very pretty. In the cooler division were fine masses of *Todeas intermedia*, *Fraseri*, *hymenophylloides*, *superba*, and others; also a very good specimen of *Trichomanes reniforme*.

A good stock of *Gleichenias* was observed in another house, in which most varieties of this beautiful but somewhat uncommon Fern were included.

But to proceed to the underground fernery: what we said respecting that upon the ground-level might be said with double force in respect to this subterranean collection of Fern beauty. It would, indeed, be an interesting and delightful retreat from a hot summer's sun, and in our case it answered not less perfectly as a harbour from a most severe thunderstorm.

The construction of this fernery has been done in a bold, free style, and use has been made of some stones of unusual size and weight. A series of projections upon one side of the paths, and of recesses upon the other side, cause them to appear to be impassable, but they wind around the forbidding-looking obstructions, and between the drooping, arched fronds of the larger growing Ferns, and something beautiful is revealed to the sight at each step the visitor takes. *Trichomanes radicans* and the

variety *dissectum* were noticeable amongst a wealth of Filmies; *Hymenophyllum caudiculatum* was sweeping up the rocks, as was also *H. cristatum*, and upon the upper surfaces were good specimen-plants of *Lomarias*, and others, especially good being a plant of *Todea superba*, about 6 feet across.

There is never any artificial heat needed in this fernery; a little protective material is merely used during severe weather in winter.

THE ALPINE PLANTS.

The alpine plants at Messrs. Backhouse's Nursery are displayed in a natural manner, for most of them may be seen by the visitor growing and flowering upon what we may describe as a very artistic and naturally-constructed rockery, that has a height of 25 or 30 feet, and at the base of this there is a small pool of water, the banks of which afford damp, comfortable nooks for some of the hardy Orchids, and a good number of aquatic and semi-aquatic plants. As we proceeded to the rockery, at the entrance thereto were freely blooming several varieties of *Rosa rugosa*; and at their foot, near to the water-edge, were *Iberis*, *Papavers*, *Aubrietias*, yellow *Hymenocallis*, *Azalea rose-florum*, *Primula auricula marginata*, &c., the last-named growing finely without a particle of soil. *Ramondia pyrenaica*, too, was splendid, and when well attended to in the matter of supplying needful water, the plant will succeed in many aspects, as its violet-purple blossoms proved here; but it does best, and needs least attention, on a slope facing the north. It is a glorious plant, and there is a white-flowering variety of it. Messrs. Backhouse have a fine stock of *Orchis maculata*, and a variety of this they call *superba*, with very deeply-coloured flowers and richly-marked foliage. Next was a new white flowering variety of the well-known *Saponaria ocymoides*; and several of the *Dianthus* as *D. glacialis*, one of the choicest species, and *D. alpinus*, a plant of no rarity, but probably the most popular of this genus. Some of the species of *Mycosotis* do grandly, including the true *M. rupicola*, and the double-flowered orange-coloured Welsh Poppy (*Meconopsis cambrica*), that originated in these nurseries, and was figured in the *Gard. Chron.*, May 30, 1896, p. 671, from a specimen exhibited at the Temple Show. There were excellent specimens of *Lithospermum graminifolium*; they throw up stems nearly 6 inches high, and bear very beautiful bell-like flowers of deep blue colour. *Campanula Allioni*, an excellent species for the rockery, was growing as freely as could be desired, and *Primula Allioni* was represented in a stock of something like 500 plants; it is one of the truest alpine *Primulas*, and flowers freely early in spring, the blooms being of rosy-purple colour. In pots was a number of plants of *Asplenium fissum*, that pretty but most difficult of hardy Ferns to cultivate. Near to the rockery is a number of beds that contain all sorts of choice alpine plants in pots, where they may be inspected conveniently, and here were noticed some good-sized specimen plants of *Saxifragas*, *Silenes*, &c. Here was the white variety of the "Bird's-eye Primrose," *P. farinosa*—a plant collected by the late Mr. Backhouse. *Gentiana tenella* [nana] too was growing as freely as the other species. The rather difficult *Gentian* seems to succeed best when given plenty of water; and the surface of the ground should be well covered with white sand.

We cannot enumerate more of the choice species of plants there were on the rockery and about it, nor to describe the ground where the herbaceous perennial plants—especially the Irises—were producing a great wealth of bloom; but our notes show that a very good collection of these plants is cultivated.

GREENHOUSE AND STOVE PLANTS.

Almost all popular species of indoor flowering and foliage plants are cultivated in quantities more or less by Messrs. Backhouse. There were batches of *Pelargoniums*, *Palms*, *Codiaeums*, *As-*

paragus scandens, plumosus, nanus, Sprengeri, and others; Cordylines, Rhododendrons, Araucarias, Scutellaria Mocciniana, and a fine lot of climbing plants. Among the latter is a new variety of Dipladenia named Lord Deramore, resembling *D. profusa*, but described as more free in flowering; the racemes frequently producing six blooms or more upon each. A pretty seedling *Codiaeum* was seen also; it had rather narrow leaves, the young ones rich yellow-coloured, and the older ones yellow in centre, the petioles being showy red-colour. In one of the houses there was a large vigorous plant of *Luculia gratissima* worthy of remark, because this fragrant species is not often seen in so good a specimen. *Lasiandra macrantha* and *Magnolia fuscata* were also represented by remarkable plants. There were from 400 to 500 pot Vines making rods for fruiting next year, and Figs also in pots.

TREES AND SHRUBS.

Of the ground out-of-doors, about 80 acres is devoted to the cultivation of trees and shrubs. The trees include forest species, ornamental species, and the most popular Conifers. There are few trees remarkable for their size or age, either of deciduous or evergreen species, the land being covered with saleable specimens from one year to twenty years old. The shrubs are very miscellaneous, and include in addition to the common evergreens, collections of Rhododendrons and hardy Azaleas.

About ten acres is covered with fruit trees, and a large proportion of these are trained specimens for planting against walls, espaliers, and in such like positions. Roses occupy another portion of the land.

It is a satisfactory sign of progress that notwithstanding the 120 acres already possessed, the firm is intending to acquire some more land further removed from the city, where additional fruit-trees may be cultivated.

THE SCIENTIFIC DEPARTMENT.

We have previously referred in these pages, to an experiment that Messrs. Backhouse are making, in establishing in connection with their nursery business, a department exclusively botanical. In an interview with Dr. A. H. Burt, who has charge of this work, a better knowledge was gained of the actual work that has already been commenced. Dr. Burt when demonstrator in botany at a provincial college, experienced considerable difficulty in obtaining at all seasons, the best material for study; and so conceived the idea that an establishment where botanical students could at all times depend upon obtaining the particular specimens they might require, would be a boon to them. Said Dr. Burt, "We undertake to supply all specimens absolutely true to name, and although we supply a large quantity of fresh specimens from the nursery, we have also preserved specimens, microscopic material, and we shall prepare a large number of photographic lantern-slides."

It is satisfactory to Dr. Burt, that the work so far done has met with hearty appreciation, and there have been many applications for specimens. The Botanical Gardens, from the Royal Gardens, Kew, downwards, have given the movement every encouragement and assistance. It is recognised that students in large towns are not always able to study specimens, and in searching for particular ones, much time is spent that would otherwise be available for study.

There are also excellent models in wax of seventy-six different types of fungi, poisonous and edible, and each is represented under conditions in which the species is most often found in Nature. We hope the experiment will be as successful as it now promises to become.

CEPHALOTAXUS.—Mr. WORDSWORTH, in the *Annals of Botany*, regards this as the most ancient of the coniferous genera, and forms a connecting link between the Cycadaceæ and the Coniferae.

FOREIGN CORRESPONDENCE.

HYBRID RIBES.

IN the valuable report of the Hybridisation Conference recently issued by the Royal Horticultural Society, I observe a paper by Dr. J. H. Wilson on "The Structure of Certain New Hybrids." Dr. Wilson refers to my work on *Ribes Culcervelli* ×, and quotes me as stating that several hybrid forms were sent me for examination, of which I chose for study the type that seemed most nearly intermediate between the two parents. He states that he has observed a similar variation, and that microscopic study showed an absence in the hybrid of the glandular hairs characteristic of the Black Currant. He then remarks:—"I am accordingly led to dissent from Dr. Macfarlane's opinion (*loc. cit.*, p. 274), that any reproduction of the sessile glands of *R. nigrum* is found to occur in the hybrid." Had I made the simple statement without further evidence, my accuracy of observation might fairly have been called in question; but had reference been made by Dr. Wilson to the figures illustrating my observations, he would have found that photo-micrographs were there reproduced of a glandular hair of the Black Currant; and one of considerably reduced size, but similar structure, on the hybrid.

I suppose no one will question the accuracy of photo-reproduction, and I accordingly adhere to my original statement as an accurate record of structural details. The oleo-resinous, greenish-yellow substance that fills the gland-cells, interferes with the delineation of fine details; and it occurred to me that before the photographs were reproduced, a slight amount of detail might have been introduced by hand. This, however, was not done; and in the present connection I am glad to be able to say that the illustrations stand as Nature drew them for us. Dr. Wilson similarly calls in question my statements regarding hairs on the ovarian-wall; but I need only say that my original observation needs no correction. *John M. Macfarlane, Philadelphia.*

MARKET GARDENING.

FIELD TOMATOS.

THOSE plants that were transplanted in May and early June from large sized 60's into rows 2 feet apart and 1 foot apart in the rows, will have made good progress if the soil was well enriched with a coating of decayed manure, and it had received deep ploughing. The Tomato is not over particular in regard to soil, and as proof of this I have seen remunerative crops of fruit produced on light and rather shallow soil in a high-lying, open situation. All the same, still better results are naturally expected from plants growing under more favourable conditions—that is, in loamy soil having a southern to westward exposure, and protection from the north and east winds. On such land, properly hardened-off plants may be planted from the middle to the end of May with safety. And to afford shelter to the plants tall-growing Peas, such as Telephone or Telegraph, may be sown at intervals of about 40 feet, the rows of Peas running parallel with the Tomatos, north and south. The Peas should be staked before the Tomato-plants are planted. The distance between the rows of Peas may be reduced in very exposed situations. In this way the plants may be set out a few weeks earlier than would be otherwise advisable, and the larger crop of fruit would more than counterbalance the cost of the Pea-sticks and sticking, which the crop of Peas would in itself nearly defray.

The best way to support the plants is to strain a single No. 14 galvanised wire to stoutish stakes driven into the soil, at about 2½ feet from the ground line, thinner stakes being employed between these, sufficiently close to each other to maintain the wire in a fairly stable manner. The wires may

be secured to the stakes by means of galvanised iron staples. Tomato-string (which is of a soft substance) should be cut into the required lengths, say 3 feet, twisting one end loosely round the stem of each plant, and the other round the wire, the plants being afterwards twined gently round the strings as they advance in growth until the wire is reached. Meantime all lateral shoots are removed.

Recently a good deal has been said respecting the uncertainty and unprofitableness of Tomatos as a field crop. Still, the fact remains that the market cultivators continue to grow the Tomato in fields year after year. It is, therefore, only reasonable to assume that these men would not do so if the crop did not pay.

MELONS IN COLD PITS.

Pits hitherto occupied with other subjects may still be planted with Melons of a hardy constitution, such as Earl's Favourite. I have grown this variety for several years in cold pits. As a matter of fact, the fruit which obtained the First-class Certificate at Chiswick in September, 1895, was grown in cold pits; so that I have great confidence in recommending the variety for this sort of work. If the depth of soil permits, it may be removed to the depth of 1 foot, and about 1½ ft. in width, along the middle of the pit, so as to leave a trench. Then mix short dung to the extent of one-third with it, and return as much of it as will form two hillocks 1 foot deep in the centre in each sash-light, and set out one plant on each. Let the pit be kept pretty close for a few days until the plants have pushed roots into the soil; then admit air gradually, and damp the plants overhead every bright afternoon at 4.0 to 4.30 in July and August when shutting up the pits. Abundance of air may be afforded from the time the fruits begin to change colour until it is ripe, otherwise colour and flavour will be lacking; and discontinue to wet the plants overhead at the ripening stage. *H. W. Ward.*

CACTACEÆ OF THE GALAPAGOS ISLANDS.

SINCE publishing my last notes on this subject (*Gardeners' Chronicle*, March 24, 1900, p. 177), some particulars have come under my notice which I had previously overlooked. Although I knew that David Douglas landed on one or more of the islands, and collected some plants ten years before Darwin's visit, I believed that the latter was the first to call attention to the existence of Cactaceæ in the islands; but I find from published extracts from the Kew correspondence in the *Companion to the Botanical Magazine*, ii., p. 87, that Douglas anticipated Darwin in some respects. Douglas landed on James Island in 1825, and made considerable collections of plants and birds, most of which were utterly spoiled by damp, against which he had no protection on board ship. In a letter to Sir William Hooker, published in the serial cited above, Douglas says:—"I have secured seeds in a good state of a very singular Cactus, which grows in the valley [in James Island]; the trunk is 2 or 3 feet in diameter, and from 40 to 50 feet high. It belongs to the section *Opuntia*, and has large, bright yellow flowers, and very long flexible spines."

This is a very interesting record, because it evidently refers to a species not observed by other travellers, or at least not described or commented on by other travellers; and a species which has probably since become extinct. In the first place, the size of the tree is nearly double that given by other travellers for any species in the islands; and to this he adds that the flowers are large. Now *Opuntia galapageia*, the common species in the islands, is remarkable in the genus for the smallness of its flowers, which are not more than ¾-inch in diameter. *O. myriacantha* (see *Gardeners' Chronicle* in the place cited) is also very different, and although it has flowers 2 inches in diameter, they are small for the genus. The late Dr. G. Baur, to whom we are indebted for much valuable

information on the flora of the Galapagos Islands, and more especially on the Cactaceæ (see *Gardeners' Chronicle*, October 8, 1898, p. 265), says nothing of Cactaceæ on James Island, nor, so far as I remember, does any other traveller. David Douglas was a trained observer, and so precise and circumstantial in his descriptions of what he saw, that we can hardly doubt the accuracy of his statements. *W. Botting Hemsley.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park New Barnet

The Thinning of Fruit.—The fruit of the Apricot having finished stoning, trees over-abundantly cropped should have the fruits reduced to due proportions. The Apricot is the most severely punished of all fruit-trees in the matter of cropping, owing to the fact that the crop is a rather precarious one, and that the cultivator is apt to take advantage of a good set to leave more than is good for the trees. The fruits may be left a trifle closer together than is advisable for Peaches, with the exception of Large Early and the Improved form of the latter, which should stand 1 foot apart. Whenever possible, remove all fruits that are likely to come in contact with the wall, nails, or branches; and when this cannot be done, loosen the branch and place something behind it, and pull out the nails.

Peaches and Nectarines.—The early varieties having stoned, the thinning of the fruits should be carried out forthwith; one well-placed fruit per square foot of wall-surface being left. The same care in thinning and in leaving the best situated fruits must be exercised as with Apricots. From now and onwards, strict attention should be paid to applying water to the border, and manure-water if very fine fruits are desired. In the metropolitan district, the soil is moist enough, but rain has not fallen, unfortunately, so plentifully everywhere. In order to make the most of the rainfall on sloping ground, a basin should be formed round each tree by drawing the loose soil in the alleys into a ridge some 2 or 3 feet distant from the stems.

Plums on Walls.—If the crop of fruit on any tree is a heavy one, liquid or artificial manure may be afforded, such as muriate of potash, bone-meal, and phosphate of lime. Trees of dessert varieties that are heavily laden should have all the small and badly-placed fruits removed; even kitchen varieties would be the better of a partial thinning when heavily cropped, the fruit being sent to the kitchen for consumption.

Red and White Currants.—The fruit being nearly ripe in the south, the bushes should be netted. The market-gardener's practice of nipping back all lateral shoots to three or four leaves admits of the fruit situated in the inner parts of the bushes becoming thoroughly ripe and well coloured. This operation should be carried out before the nets are put over the bushes.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAR, Bart., Clare Lawn, East Sheen, S.W.

Dendrobiums.—Plants of the nigro-hirsute section usually fail to survive for more than a few years under cultivation, in this respect being more remarkable than most of the other species. The reason for this is in many cases difficult to ascertain, so many things contributing to this loss of the plants, the chief being, doubtless, improper temperatures, insufficient sunlight, and imperfect rest after growth has ceased. Those requiring a moderate temperature, viz., *D. Jamesianum*, *D. infundibulum*, and *D. longicornu*, are now growing anew, and repotting, where rooting-space is lacking, may be proceeded with forthwith. All of these species may be planted in small well-drained pans, or Orchid-pots, in the usual sort of mixture, and be placed in the cooler part of the Cattleya-house, where abundance of air and indirect sunlight may reach them. Water should be supplied abundantly whilst the plants are active at the root, affording rest when the pseudo-bulb growths approach completion, continuing it for a long period, the plants being kept moderately dry. Throughout the

summer the plants should be well syringed several times a day. *D. formosum* requires similar treatment, so far as air and sunshine, affording water, and syringing the foliage are concerned, but a higher temperature should be applied. This species succeeds in baskets hung near the upper ventilators of the East Indian-house; and, excepting plants newly-imported, repotting should not be performed at this season if the growths are much advanced.

Laelia harpophylla and *cinnabarina*.—The bright-coloured flowers of these species make their inclusion in collections very desirable; and for this reason, they have been much employed by cross breeders. *L. harpophylla* is an inmate of the cool-house, succeeding under the same conditions as with *Cypripedium insigne*, whereas *L. cinnabarina* requires Cattleya-house treatment. If these plants require fresh materials, or greater rooting-space, they may receive attention, growth being on the move. Pots or pans, filled to about three-fourths of their depth with crocks may be used, together with a compost consisting of peat one-third, and sphagnum-moss one-third. Let water be sparingly applied till new roots have permeated the compost, and likewise when growth is finished, but during growth afford it liberally.

Laelia flava, *L. longipes*, and *L. Lawrenceana* succeed when placed in shallow baskets, or on rafts horizontally suspended with but very little moisture-holding material about their roots. Place them in the cooler part of the Cattleya-house, and afford water freely only when there is active growth at the root. These three species require a very long rest period.

Oncidium tigrinum is an Orchid which makes its growth late in the season, but once started the pseudo-bulbs grow with rapidity. The plants may now be afforded new material at the root, and be placed in a light position in the intermediate house. Afford but little water before the roots begin to push, and afterwards keep the compost moist until the pseudo-bulbs reach their full size. *O. t. unguiculatum* is a plant scarcely worth growing, excepting for variety. It requires the same sort of treatment.

Oncidium crispum.—This species and *O. Marshallianum*, *O. prætectum*, *O. Forbesii*, and *O. Gardnerianum*, grow well together under conditions that suit *Masdevallias*. Well-drained baskets or Orchid-pans should be used for them, and they may be hung near the light. All of those species named require a very decided differentiation of the seasons of growth and of rest, the latter season is the one in which so much mischief is done by affording water unnecessarily. All through the growing season, however, too much water can scarcely be applied, providing there is a free outlet and evaporation is rapid, and ventilation freely afforded.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Endive.—The first large sowing may now be made, and a larger one made about the end of the present month. The first sowing may consist of Green Curled, a variety much liked in the salad-bowl; and if there are any pits or cold frames at command, a moderate sowing in them at the same time as the outdoor sowing. The broad-leaved Batavian is a perfectly bardy Endive, and on that account is very suitable for the late sowings, and a useful change as a cooked vegetable. Endive succeeds when sown thinly on moderately rich soil, in rather shallow drills drawn 5 inches apart, the soil being kept moist till germination has taken place, the most effectual method of doing this being to lay mats on hoops bent over the beds, and to keep the mats wetted. The plants should be thinned to 4 inches apart, and when sufficiently large to handle conveniently, transplanted where they are to grow. The land should be moderately manured and deeply dug. This mode of cultivation involves a considerable amount of labour, and some gardeners may prefer to sow the seeds where the plants are to grow without transplantation, and in this case rich manure should be well mixed with the soil in the course of digging it, and drills should be drawn at 1 foot apart for dwarf curled, and 1½ ft. for broad-leaved varieties. The seed should be sown thinly, and thinning performed, if necessary, before the plants become crowded. The seeds should receive a sprinkling of fresh soot before filling in the drills, in order to deter slugs from attacking the plants. If any sowings were

made in May, the plants may be removed to their permanent quarters, and planted at a distance of 1 foot apart.

Spinach.—Seed may still be sown at intervals of three weeks. As has been mentioned, Spinach succeeds when sown between the rows of Beans and Peas, providing the soil is moderately rich, and a space of 6 feet is allowed between the rows; but where this cannot be done, sowings may be made on a north border. The seeds should be sown in shallow drills, made at 18 inches apart. In view of the later sowings, the ground should now be got in readiness, as in cold districts the sowings should be made about the end of the month of August, the site for the Spinach beds being preferably on south or at the least well sheltered, warm borders or quarters. Quick and sturdy growth is alone capable of withstanding hard frosts.

Peas.—Late sowings may now be made, and the plants resulting will, if given a fair amount of water, produce useable pods about the middle of the month of September, and onwards for a few weeks, providing no frosts occur. The ground should be good, but not freshly manured; and at this season it is as well to sow in shallow trenches, thrown out at about 3 feet apart. This distance will be ample for dwarf varieties, which most gardeners sow at this season. Before sowing, the soil should be afforded water copiously, and the seeds soaked for a few hours in water. The seeds must be thinly sown.

Broccoli.—These plants should now be set out at the first favourable opportunity. In few gardens is it possible to reserve an exposed plot for Broccoli; moreover, planting has often to be deferred till other crops have been cleared off, such as Peas and Potatoes, and rather than let the plants starve in the seed-beds, the ground should be levelled and made firm as the rows are dug up, and a few Broccolis be planted at a time. The rows should be 2½ feet, and the plants 2 feet apart. Penzance Early White, Snow's Superb, Winter White, and Backhouse's Winter White, are suitable varieties for this planting.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Ilchester, Abbotbury Castle, Dorsetshire.

Polyanthus and other *Primroses*, and *Auriculas*.—If seeds of these plants are saved from the best of the home-grown plants, it should be sown as soon as ripe. The old plants may be divided at this season, and in warm localities near the sea *Auriculas* should have a warm border prepared carefully for them before dividing them. The plants succeed in yellow loam and leaf-mould, together with rotten cow-dung, soot being employed as a deterrent to slugs, which are apt to gnaw the root-stock. *Auriculas* being the better for protection against excessive moisture in winter, the border should slope towards the south, or in some other direction, 2 in 10 being a sufficient fall. Oiled canvas frames or glass sashes afford useful protection for covering at such times, preserving the powdery coating of the leaves of these plants.

Palms, *Chameerops excelsa*, and *C. humilis*.—When these species are planted in the open, they should be sturdy plants, 4 to 6 feet high, with clear stems, furnished with the natural fibre, such plants being full of vigour, which enables them to make progress forthwith if they are placed in a warm and favourable situation. The ground should be well drained, naturally or otherwise, the plants requiring an abundant supply of water during growth, and not much at other seasons. Large specimens taken out of tubs or pots should have the foliage well cleansed with sponge and soapsuds made with soft-soap and rain-water, previously to being planted; all dead leaf-stalks should be removed with a pair of scissors to within 3 inches of the stem, which if it be performed regularly afterwards gives the stems a neat appearance. The best kind of soil is a rich sandy, turfy-loam, with grassy-sods covering the drainage material, placed at the bottom if any be required. Coarse charcoal and crushed bones would keep the plants in health if added to the soil for a lengthened period. The fresh soil should not have a less depth than 2½ feet. The planting of larger specimens than those of 6 feet high requires great care, and special appliances, and sometimes a sloping passage cut down into the hole, besides strong planks and rollers under the ball. The bottoms of tubs or boxes, if partly rolled, may be left under the plants. The thick roots may be

spread out a little at various levels, if this can be done without breaking them. Finally the soil must be made firm round about the ball. The present date is suitable for planting Palms in the open air from tubs, pots, and indoor borders.

Dahlias.—These plants should now have their shoots thinned, and all that spring from the base of the stem removed. In order to encourage a regular show of flowers, many of the lateral shoots should be removed, leaving as many shoots as will form a symmetrical head. Let neat stakes of the required height be placed to the number of three to each plant. A twist of matting round each stake at the bottom supporting the branches, will keep them steady. Towards the top let each branch be fastened separately, so as to give space for the flowers, but avoid giving the plants a mop-headed appearance. Disbudding should be performed when the buds are distinguishable, and let a few more than are required be left, as some are sure to be injured by earwigs, &c.

Pruning Deciduous Shrubs.—Any of the recently-planted shrubs, such as Weigelas, Deutzias, Lilacs, Philadelphus, Spiræas, &c., may have the more vigorous shoots cut back to about one-third of their length, thus adding to the compactness and shapeliness of the bushes, which, if left to themselves, would become top-heavy, with but few flowers. In established bushes the flowering-shoots which have become weakened and drawn may be severely cut back or removed entirely, and likewise all useless sprays and shoots so as to let sun and air to the interior of the head.

Hints on Operations in the Greenhouse and Cold Pits.—Now that the bedding plants are removed, no time should be lost in getting repairs executed, whitewashing, and general cleansing carried out. The heating apparatus should be overhauled, and everything about it put in a thorough state of repair.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

Tree and Souvenir de la Malmaison Carnations.—Those plants which have ceased to flower and are going to be kept for another year, should be moved into larger pots; it being undesirable to keep them beyond the third year. Before repotting them, flower-stems and decayed leaves should be removed, and if aphides are noticed on them, they should be dipped in weak tobacco-water or suds made with soft-soap. Let clean pots be employed, into which a good portion of drainage material should be put. As a potting compost, make use of good turfy-loam free from wireworm in the proportion of three-quarters dry cow-dung, and leaf-mould one quarter, with sufficient silver-sand to ensure porosity. The soil should be made moderately firm, using a rammer, and the plants should be placed in a cold pit, using light shading until growth starts anew, and applying water sparingly, tilting the sashes top and bottom, or removing by day, excepting during periods of heavy rain. Layering should be carried out soon, for if deferred much after this date, the wood becoming too firm for rooting readily, and getting established before the beginning of winter. Spent hot-beds in frames and pits on which there is a good bed of light soil may be utilised for layering the plants, such being more suitable than the borders out-of-doors. Cleanse and afford the plants water before turning them out into the soil; and in the case of large plants, plant them on their sides well below the surface. A quantity of sandy soil and layering-books being ready to hand, with a keen-edged knife carefully cut below a joint and pass the blade upward to the next joint above. Fix the book over joint firmly in the bed, working the fine soil between the "tongue" and the stem, covering all of the stems with fine mould about 2 inches deep, and press down carefully so as not to break the bent stems. Finally, afford the soil some water, and keep it moist afterwards. The frames should be lightly shaded from bright sunshine, more especially Malmaison varieties, or the leaves may become of a yellow tint. Cuttings or pipings of Pinks will root readily now if put on a gentle hot-bed, dibbling them in to the number of ten in a 5-inch pot filled with sandy soil, and keep moist; when rooted and inured to the air, plant them out in beds at 1 foot apart. With due attention to affording water and stirring the soil these will make nice plants for potting-up for forcing. Any sort of Pink will flower freely if properly prepared and started

in an intermediate-house, but the smooth-petalled varieties are more suitable than the fringed ones for pot-culture.

Herbaceous Calceolarias and Humeas.—Seeds may now be sown in well-drained pans filled with a compost consisting of loam one-half, leaf-mould one-half, and plenty of silver-sand; the surface should be made quite level and firm, and the pans afforded water before sowing the seeds. In sowing these and similar minute seeds, it is prudent to mix these with a small quantity of fine dry silver-sand, so that their distribution may be uniform over the surface. The seeds should not be covered. Place the pans in hand-lights on the north side of a wall or building, and cover with a mat until germination has taken place, which will be in about ten days, when gradual exposure to the light should take place, and air be afforded. If the seed-pans are placed on inverted flower-pots stood in large saucers, &c., containing water, slugs cannot reach them.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Vines.—While the present unsettled weather continues, more than ordinary care will be required in maintaining a steady degree of warmth in the heating apparatus at all times, so as to be able to meet any sudden fall in the temperature outside, and avoidance of changes from dryness to saturation, which is capable of causing much harm to thin-skinned Grapes, unless sufficient heat is present in the pipes to produce a buoyant atmosphere when sudden depression occurs. But little damping down will be required, and this should take place in the early part of the day, simultaneously with the admission of air. Too much atmospheric moisture with but little ventilation during dull weather favours the spread of mildew, the worst enemy of the Vine in this country, and should therefore be carefully guarded against.

The Early Vinery.—The Vines when cleared of the bunches should be thoroughly cleansed by repeatedly syringing them; and if red-spider should have gained a footing, a washing with a weak concoction of carbolic soap and water will prove useful in destroying it. Every effort should be made now to maintain the old foliage healthy until the autumn, and then strengthen the buds that will afford next season's fruit. If the vinery is intended for early forcing next season, the growth of laterals should be checked, and growth allowed on the point of a few of the shoots. All laterals below the fifth or sixth leaf down to the base of the fruiting wood should be entirely removed, so as to let the sun reach the main shoots. Let the borders be kept in a moist state, and apply liquid-manure occasionally.

Succession Vineries.—If the Grapes are in the earlier stages of colouring, the Vines should be afforded a fair amount of atmospheric moisture, so as to sustain the principal leaves throughout the ripening period. At this stage the berries swell rapidly, and liquid-manure, together with a light dressing of wood-ashes, should be applied, which will assist in giving colour and bloom to the fruit. A small amount of ventilation at night, and an increased volume by day, until the fruit is fully ripe, should be applied. The warmth at night should range from 60° to 65° for all varieties ripening at this season excepting Muscats, which should be afforded 70° to 75°.

Late Vineries.—The bunches should be examined for stoneless berries, at the same time removing berries where there is overcrowding. These Vines are at the stage when scalding of the leaves generally occurs, which is a mishap that may be avoided by affording ventilation at night, in order to dispel moisture, and by increasing the amount in the morning as soon as an increase in the degree of warmth from sun-heat is noticed. The laterals should be closely stopped on the fruit-bearing shoots, but more freedom of growth should be allowed at the top and bottom of the Vines, so that root-action may not be arrested.

Young Vines.—The aim of the gardener should be directed to obtaining short-jointed and firm wood by means of moderate temperatures and free ventilation during the day. At closing time on fine sunny days the plants may be freely syringed, and the temperature may fall to 60° during the

night. The borders should be kept uniformly moist, and liquid-manure applied at times. Let all lateral growth be stopped at one leaf.

THE APIARY.

By EXPERT.

BEE-KEEPERS should now be on the watch for swarms, as the hot weather we are having causes the bees to come out very quickly, and if no one is at hand, are apt to settle for a short time; others rise and fly away. It is not only important that you secure your swarm, which now will be worth 10s., but in cases where sections are being raised, they should be returned, after destroying the queen or taking her away to replace another not so good. In catching your queen, care should be taken that you do not damage her wings; this is a very common thing to do. If her wings are injured she is worth very little. Always catch and hold her just behind the wings. The reason they should be returned is that your sections may be finished; if not put back, you will have a lot of good sections unsaleable through not being properly sealed. The section crates should be secured, wrapped up to prevent the bees escaping either to the left or right, and building behind the dummy-board, which not only means a loss of honey, but valuable time, which in our short seasons cannot be regained. The same thing applies to sections: as soon as they are filled up, replace with empty ones, or place another crate under the one which is full, or nearly so. It is not a good plan to place an empty section crate on the one nearly full, as it reduces the heat of the hive, and the bees will often swarm rather than go up to it. If a careful bee-keeper has taken notice, he will have found that by placing the empty crate under the one which is nearly finished, the bees will travel up through the empty one to finish off their work above, and by using the empty one they become so familiar with it that they will commence on it after the other is finished. Care must be taken that a little smoke be blown into the crate, otherwise a number of bees will be destroyed in placing on the section below. In taking away sections, one should be careful that the full sections are kept the same way up as the bees have worked them, there is then no danger of any cell which has not been properly sealed running out. It is as well to bear in mind that you not only get one section damaged, but the honey running over others below causes a good deal of damage and annoyance.

Honey Imports.—From a return furnished to the *British Bee Journal*, we find imported into this country £2,911 worth of honey. This seems a great deal, and it should not be, considering the honey is not so good, and ought and can be obtained in England.

"ERYTHEA."—This Californian journal, devoted to the botany of Western America, and edited by Professor JEPSON, comes to an end with the present number. The botany of this country is so interesting that we cannot think botanists will be long content to be unrepresented.

PLANT PORTRAITS.

ACACIA LINEATA.—A species with small linear phyllodes, and small globose heads of yellow flowers. *Revue de l'Horticulture, Belge, July.*

ACACIA RUPESTRIS.—Spikes of yellow flowers. *Revue de l'Horticulture, Belge, June.*

ARDISIA HUMILIS.—Vahl.—*Jr. Hort. Thénensis, t. XIX.*

BEGONIA LEHMANNI.—Warburg.—A species from the Cameroons, of much botanical, but little horticultural, interest. *Garten Zeitung, t. 1476, June.*

BUDDLEIA AURICULATA.—Icon. *Hort. Thénensis, t. XX.* [Conf. *Masters in Jour. Soc. Linn.*, vol. xix., December 1, 1881; *Gardeners' Chronicle*, November 9, 1889, fig. 73].

CESTRUM FASCICULATUM.—*Revue de l'Horticulture, Belge, June.*

CORETHROGYNE FILAGINIFOLIA.—Nuttall.—*Icon. Hort. Thénensis, t. XVIII.*

ESCALLONIA VISCOSA.—*Icones Selectæ Horti Thénensis, t. XVI.*

IRIS STYLOSIA.—*Revue Horticulture, June 1.*

MYRTARIA PUNCTATA.—Cogniaux.—*Icon. Hort. Thénensis, t. XVII.*

PEAR THEOPHILE LACROIX.—Medium or large size, regularly pyriform, with a short stalk set in a shallow basin, yellowish, with brown russeting. Ripe in December; rich flavour. *Bulletin d'Arboriculture, &c., July.*

PINELEA SPECTABILIS.—*Revue de l'Horticulture, Belge, July.*

ROSE MADAME ARTHUR OGER.—A seedling from Madame Isaac Pereire, sent out by MM. Letellier et fils of Caen. It is of the type of Paul Neyron. *Revue Horticulture, June 16.*

EDITORIAL NOTICES.

ADVERTISEMENTs should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JULY 7	National Rose Society's Show at the Crystal Palace, London. Wood Green Horticultural Society's Show at the Alexandra Palace.
TUESDAY, JULY 10	Wolverhampton Horticultural Sh. (3 days). Rose Show at Harrow.
WEDNESDAY, JULY 11	Royal Caledonian Horticultural Society's Rose Meeting. Rose and Horticultural Shows at Stevenage and Brockham.
THURSDAY, JULY 12	Rose and Horticultural Shows at Cambridge, Brentwood, Wimbledon, Eltham, Salterhebble, and Woodbridge.
FRIDAY, JULY 13	Rose Show at Ulverston.
SATURDAY, JULY 14	Rose and Horticultural Shows at Manchester and New Brighton.

SALES.

FRIDAY, JULY 13.—Imported and Established Orchids at Protheroe and Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—63° 3'.

ACTUAL TEMPERATURES:—

LONDON.—July 4 (6 P.M.): Max. 69°; Min. 54°.

July 5: Dull, showery.

PROVINCES.—July 4 (6 P.M.): Max. 67°, Eastern Counties; Min., 50°, N.E. Scotland.

The Royal Horticultural Society's New Bye-laws.

THE adjourned special general meeting of the Fellows, called to adopt "with or without alteration or amendment," the new bye-laws, was held in the Canteen at the Drill Hall, Westminster, on the afternoon of Tuesday last. It was apparent from the somewhat limited number of Fellows present, that the suggestions unofficially made by the society's secretary in the horticultural press last week, satisfied in some measure the almost universal dislike there exists to the principle of proxy voting. At the same time it was not absolutely certain that the Council would bring forward the proposed amendments in place of the objectionable clauses 45 to 48 inclusive.

When the minutes of the last meeting had been confirmed, the President, Sir TREVOR LAWRENCE, explained that it would be convenient to take chapter by chapter, and amendments could be proposed to any bye-law in each chapter in cases where Fellows so desired. The first chapter was then accepted unanimously, but in Chapter II. amendments were raised to Bye-laws 6 and 10. In respect to Number 6, Mr. J. WEATHERS proposed an amendment that would have had the effect of giving to the Fellows of the Society assembled at general meeting the sole right of election of new Fellows, whether the Council raised objections to any particular nomination or not. The amendment was seconded by Surg.-Maj. INCE, after which the President explained

that it was advisable that the Council should be given the power to reject nominations of persons it might not be desirable to make Fellows. In the past there had been persons proposed as Fellows that it would have been to the interests of the Society to exclude.

Sir ALEX. ARBUTHNOT and Mr. CHAS. E. SHEA supported the view expressed by the President, the latter gentleman explaining that the rule was one followed in many similar societies, and it was particularly desirable that the Council should have the right of exclusion, because the reasons for taking objection to particular nominations might be of a nature it would not be wise to make public. The amendment was lost.

Bye-law 10 stated that "Ladies may be admitted Fellows or members of the Society, but shall not be eligible for election as officers of the Society, or as members of Council." Mr. A. DEAN moved to omit this law altogether, as he thought that sex should not influence the Society in the least in relation to the status or privileges of its Fellows, and went to some little trouble to show what distinguished persons there are among the lady Fellows of the Society, who, in all, number about one thousand. Under the new law it would not be possible, said Mr. DEAN, to employ even a female typewriter in the Society's offices. The President said the Council had no feeling in this matter whatever, and was quite prepared to accept the amendment, which was accordingly adopted. Ladies will be therefore eligible in future to serve as members of the Council.

Chapter III. was passed after the words "men of science" had been substituted for the word "horticulturists" in Bye-law 16, on the proposition of Dr. MASTERS. Chapters IV., V., VI., and VII. were adopted without alteration; and in Chapter VIII., beginning at Clause 45, the question of voting by proxy was reached. To clear the way, however, those bye-laws in Chapter VIII., that precede number 45, were passed without alteration. Then Sir TREVOR LAWRENCE said that the Council were sensible of, and were desirous of meeting, the objections that had been taken to the bye-laws 45, 46, 47, and 48, and it was their intention to propose amendments in place of those bye-laws, on the lines suggested by the letter published in the horticultural press (see *Gardeners' Chronicle*, June 30, p. 418). Sir T. LAWRENCE urged that Fellows living in and near London enjoyed the whole of the privileges that the Society offers, including that of assisting in the management of the Society's work. It might happen that the Fellows present at a particular meeting might adopt a proposal that would have a very great influence and effect upon the Society's future, and he thought it but fair that the whole of the Fellows all over the Kingdom, should be given a voice in the ultimate issue. It was not intended to resort to this referendum, except upon questions that were considered by the Council to be most important ones. The only opportunity of voting that absent Fellows have had hitherto, has been upon the Council's suggestions each year in respect to the appointment of new members of the Council, and cases where this opportunity had been made use of were so rare that he could not remember an instance.

Mr. ARTHUR W. SUTTON said he was sure it was the earnest wish of everyone present to accept as many of the new bye-laws as they could, for they recognised that much trouble and time had been taken in their compilation. Nevertheless, Mr. SUTTON, quoting the words

of the President respecting the little use that Fellows, living at a distance, had made in the past, of opportunities of recording votes, thought that no case had been made out for the very radical change now proposed. The Fellows assembled in general meeting had hitherto had power to finally settle any question brought before them, and the Society had prospered. But in the future, seeing that it was proposed to give the Council the right to refer any matter discussed at a general meeting to the Fellows at large, Mr. SUTTON was of opinion that it would reduce the general meetings to a state of impotence, because when the Fellows declared against the Council upon a question, the Council could at once describe the matter as an important one, and appeal to the rest of the Fellows. Mr. SUTTON said that all of them trusted the present Council, who were doing very useful work, but he objected to give to all future Councils arbitrary power, because it was considered that the present Council would not abuse it. Mr. SUTTON thereupon moved an amendment to the effect that when there was a majority of not more than three-fifths upon a question discussed at a general meeting, the minority shall have the power to refer the matter to a *plébiscite*. Dr. MASTERS seconded this resolution, and after expressing appreciation of the present Council, said that there was no saying what Councils in the future may be like. In the past they had had Councils that they were very glad to get rid of.

Sir TREVOR LAWRENCE accepted the resolution, and after a few remarks by Sir J. T. D. LLEWELYN in favour of a referendum of some kind that may be used on extraordinary occasions, it was decided that Mr. SUTTON's resolution should be embodied as a separate bye-law, to be numbered 48A or 49.

The Secretary was then requested to read again the new clauses, which Mr. WILKS described as being practically the same as had been published, but which the President said he considered to be materially different. After they had been read, Mr. ARTHUR SUTTON said that his purpose was not obtained by incorporating his resolution and retaining those proposed by the Council. He thought the meeting understood that the only body which would be able to demand a referendum was the Fellows who found themselves in a minority at a general meeting, and that the Council should not be able to appeal from a general meeting of Fellows, to Fellows not present at that meeting.

Sir TREVOR LAWRENCE, who apparently had thought Mr. SUTTON's objection had been met, said that he could not consent to the taking of a power from the Council, that that meeting had decided to give to less than three-fifths of any general meeting that may be held. Sir TREVOR said that in that case he was not sure what action his colleagues would take. But the meeting had evidently decided that the compromise already obtained was sufficient, and when the President moved that the contentious clauses together with the new one of Mr. SUTTON's be passed, the vote in favour was next to unanimous.

The interest of the proceedings was now nearly over, but bye-law 67 in Chapter IX. was qualified, so that no member of the Council be dismissed on account of non-attendance, if the rest of the Council by resolution declare that his absence had not been due to preventable causes. Thus if he were in South Africa at the present time, this would be

sufficient excuse. Chapter X. was passed with several minor alterations, proposed by Mr. A. H. SMEE, respecting auditors. Chapters XI., XII., XIII., XIV., and XV., were then adopted, and also the Appendix, which consists of the several forms to be used by the society, including the new one, "D.," which was published on p. 419 in our last number.

The principal alterations the meeting effected in the bye-laws as proposed by the council were—(1), ladies will be eligible to become members of council; (2), when the council at a general meeting carries a resolution by a three-fifth's majority only, the minority will have the power to poll the whole of the Fellows at the expense of the society. When a question at a general meeting is decided against the council, the council will have the right to poll the Fellows, let the majority have been large or small.

We have received various communications on the subject, which show that the decision of the meeting does not meet with universal satisfaction. Some of these letters we may print in a future issue.

A Seaside Garden.

THE garden we allude to is in the heart of a seaside town under the shadow of the church-tower, grim

and brown. In front, as we stand on the bank on which the garden is situated, is the quivering surface of the deep blue sea, flecked with scattered masses of white foam. Afar off in the distance may readily be seen on clear days the French coast, a veritable replica of our own. To the left is the beautiful sweep of Eastwear-bay, bounded at its two extremities by the gault and greensand of Copt Point, and by the noble range of cliffs, of which that which bears the name of SHAKESPEARE forms the termination eastward. Close at hand are the pictorial habitations of the fisher-folk, and a stranded steamer, which seems too big for the little harbour—a triton among the minnows—the minnows, to explain the metaphor, being the numerous fishing boats.

Above all is the blue sky, azure blue, with a few drifting masses of white cloud. The bank at our feet is of greensand, with a capping of some much more juvenile whitish sand, wherein they do say elephant's bones have been found. It may be so, all we see now are sheets of yellow Charlock, contrasting with the glowing red of the Poppies; or the intense blue of the Bugloss; Smyrnium, a bold Umbellifer is in fruit; Mallows are in full bloom; the deep green feathery leaves of the Fennel are pushing up amid the grass and the dead stalks of last year's growth; Sea Pink Thrift is in full bloom, a plant once much used in place of Box edging. Tamarisk, light and feathery; and Sea Buck-thorn, grey and spiny, serve to keep the cliff together, and prevent the annihilation of the big hotel at the foot.

But we must leave the further mention of this delightful bank till another opportunity. To turn to the garden itself, we may say that it comes as a surprise to many who have known the town for many years, but had not previously known or entered what we may appropriately call the Priory-garden—appropriately, because the grey walls of the old monastic buildings are still in existence. The special feature about the garden is the ample protection to an otherwise much-exposed situation, afforded by skilful planting and judicious selection of shrubs.

The outer boundary consists of belts of Euonymus and broad-leaved Privet, within

which are clumps of trees and shrubs, consisting of Tamarisk, Willows, Sycamores, Austrian Pines, Evergreen Oaks, Elders (in full flower), all of which serve to break the force of the south-westerly gales. These trees are not subjected to the barbarous clipping of which Folkestone gardeners seem so enamoured. In the foreground of the shrubberies are fine specimens of Escallonia macrantha, quite hardy in this locality, and Hodgen's Holly. Scattered on the lawns are fine Mulberries, Thorns, and other trees; there, too, is a veteran Holly of large dimensions, to whom time has not been kind, for chains are now found necessary to bind its rifted limbs together.

Cunningly devised walks leading now to sheltered shady nooks, now to gaps in the boundary, through which, on this glorious June day, the sea may be seen sparkling and flashing as only the sea can do. Beyond the skilfully-arranged shrubberies there is not much that calls for special notice in this garden. Just now it is gay with Oriental Poppies in full splendour, Roses not yet unfolding their petals, Lupines, Antirrhinums, White Pinks, Campanulas, Marigolds, and a variety of herbaceous plants. Bedding plants, few in number, consist of the ordinary Pelargoniums, and of a fine strain of Begonia. A veteran espalier Apple is well nigh killed by American-blight, a circumstance we mention for the purpose of suggesting—if these lines should meet the eye of the owner—that it be removed and burnt forthwith, to save neighbouring trees from contamination. The gables and oriels of the house are covered with Roses and other creepers, and so that the garden, though of modest dimensions and destitute of any special gardening feature beyond that which we have mentioned, is very attractive albeit almost unknown to the inhabitants of what Charles Dickens called Pavilionstone.

LILIUM WALLICHIANUM GROWING IN A NEW ZEALAND GARDEN (Supplementary Illustration).—The handsome species of Lily, the subject of our illustration, belongs to the Eulirion subsection of Liliums. The flowers white, fragrant, and the perianth narrow and funnel-shaped. The leaves are shining green and glabrous. In this country it must be afforded greenhouse treatment. In New Zealand, whence our photograph was received, the plant succeeds in the open ground, and it reaches a height of 5 to 6 feet; whereas under glass culture here it reaches only 3 feet. We are indebted to the kindness of Mr. THOS. CRANWELL, of Valley Road, Mount Eden, Auckland, for the photograph, and for a description of the plant. He writes that the soil in which it grows is of a light volcanic nature, which supplies perfect drainage; and the bulbs do not push through the soil until the summer is well advanced.

BOTANICAL MAGAZINE.—The July number contains coloured illustrations and descriptions of the following plants:—

Lilium Browni var. *leucanthum*, t. 7722.—BAKER in *Gardeners' Chronicle*, 1894, ii., p. 180.

Hesperaloe yuccaefolia, t. 7723.—A plant with tufted leaves like a filamentous Yucca, from whose centre springs a stalked branching panicle of rosy-pink, cylindric flowers, with a spreading limb of six broadly ovate, yellow lobes.

Dendrobium Hodgkinsoni, 7724.—A New Guinea species, with greenish flowers and white lip, traversed by purple lines. Introduced by Messrs. SANDER & CO.

Dipladenia pastorum var. *tenuifolia*, t. 7725.—A twining plant with long linear leaves, very narrow flower-tubes, expanding into a broad flat limb of

five, roundish, acute, rose-coloured lobes. A native of Brazil.

Robinia neo-mexicana, t. 7726.—A native of the Rocky Mountains, with pendulous racemes of pink pea-shaped flowers. Kew.

THE SWEET PEA CELEBRATION.—We are informed that the Exhibition and Conference meetings to be held at the Crystal Palace, Sydenham, on the 20th and 21st inst., will be presided over by Alderman and Sheriff Sir W. P. TRELOAR. The whole of the eastern division of the nave from the Handel orchestra will be occupied by the competitive and miscellaneous exhibits. There will be an opening ceremonial on the completion of the judging, to be followed by a luncheon to the foreign visitors, judges, &c.; a Conference meeting during the afternoon, and a banquet in the evening, together with Conference meetings on the second day. There is the promise of a very large exhibition. The Secretary and Treasurer is Mr. R. DEAN, 42, Ranelagh Road, Ealing.

MAIDEN ERLEGH, near Reading, has been sold to Mr. JOEL.

STRATHFIELDSAYE.—In consequence of the death of the Duke of WELLINGTON, great changes in the garden establishment are contemplated. Mr. MCHATTIE, the well-known head gardener, has to seek another situation. We trust he may soon find one suitable to his abilities.

LEONARD BARRON.—We are pleased to see the portrait of our friend and former assistant in the pages of the *Weekly Florists' Review* (Chicago). Mr. BARRON is Secretary to the American Rose Society.

MR. BARR.—New Zealand papers give details of the enterprising journey of Mr. PETER BARR. His pace is leisurely, and he sometimes visits the same place repeatedly. "Absolutely his own master, and without care or business worry, Mr. BARR devotes himself entirely to a studious and observing tour of the world, and wherever he goes he takes an enthusiastic interest in the horticulture of the place." He visits the public gardens, and freely dispenses his suggestions and the result of his experience.

M. GEORGES MANTIN.—The well-known Parisian orchidist has been nominated Chevalier of the Legion of Honour. *Nos félicitations empressées.*

PRESENTATION.—Mr. JOHN LOBB was, on Thursday, June 21, presented with a portrait of his youngest daughter, DOROTHY, aged seven years, at the Temple, Wanstead Park, by the Epping Forest Committee, in appreciation of his services as their Chairman during the year 1899. The painting is by Mr. JOSEPH MORDECAI. Mrs. LOBB was also presented with a diamond ring.

SCOTTISH ARBORICULTURAL SOCIETY.—The Royal Scottish Arboricultural Society have issued a syllabus of subjects for competitive essays that may be submitted to them before June, 1901. These essays, reports, and articles bear relation to various branches of arboriculture and forestry, and a prize will be awarded to the best contribution in each class. A general meeting of this Society is to be held on August 7 next, at 5, St. Andrew Square, Edinburgh, when, among the business to be transacted is a consideration of the damage done to woods and crops by sparks from railway-engines. A short Bill has been introduced into the House of Commons with the object of placing railway-engines on an equal footing with road locomotives as regards liability to pay compensation for damage from fire caused by the emission of sparks. As definite information on this subject is much wanted by those interested in the Bill, the Council of the Society invite members and others to prepare and send to the Secretary Mr. GALLOWAY, address as above), full particulars of all fires caused by railway-engines, which, to their knowledge, have occurred in recent years, but for which no compensation has been received.

AN INTERESTING RECORD.—On Monday next Mr. T. W. BOLAM, the general superintendent of the Sunderland Cemeteries, will have completed twenty-five years' service, he having made his first appearance before the Sunderland Burial Board in 1875. There were 186 applicants for the position, and at a full meeting of the Board, Mr. BOLAM was unanimously appointed. There is a great contrast between the cemeteries of 1875, and the beautiful grounds now controlled by the Sunderland Corporation, and the change is a proof of the progress in cemetery management generally which has taken place during the last twenty-five years. The change in the appearance of the grounds in twenty-five years is marvellous, each of the three cemeteries being practically transformed into a park. Mr. BOLAM, during his management, has taken great interest in the floral displays in these cemeteries. Mr. BOLAM has been Chairman of the Sunderland and District Gardeners' Mutual Improvement Association since its formation nine years ago.

THE DOUGLAS FIR.—Mr. ANTHONY WATERER sends us specimens of the cones of this species raised from the same batch of seed. The variation in colour is most remarkable, ranging from Apple-green to rich purple. The bracts also vary in degree to which they project beyond the scales; they vary in form, some being broader than others, and especially in the length of the acumen or terminal point. In every case they are wedge-shaped at the base, two-lobed at the apex, with a long acumen between the lobes.

"CHAMBRE SYNDICALE" of Belgian nurserymen. The annual report for the past year is now before us. It contains a summary of the work of the year, together with a list of the members. What we effect by means of several different associations is at Ghent, carried on by one body, the *Chambre Syndicale*, which looks after the interests of its members in every direction. It is thus like a blending of the several Committees of the Royal Horticultural Society, with the Nursery and Seed Trade Protection Society, and the various other trade Societies. No doubt the work is done in a less wasteful and more business-like fashion.

THE AGRICULTURAL EDUCATION COMMITTEE.—On Friday, June 22, the Executive of this Committee presented a report to the members of their first year's work. That the plight of gardeners is bad enough most will allow, but that of the labourer of a farm is still worse. The former often chooses his vocation, the latter generally is a boy who had not done well enough at school to become anything else. Neither is educated as a rule in a way that gives any taste he may have for country work or country things, a chance to help him on. The changes in rural education agitated for and obtained by the Agricultural Education Committee, should alter all this as time goes on, and our future horticulturists, as well as farm hands, will start work with some knowledge of the principles of their craft. Sharper lads too will be inclined to join their ranks, and the status of culturists should be raised. Those who have the care of plants or animals can never have the short week or day's labour possible to ordinary artisans. The mistake is for lads or lasses who are not thoroughly in love with their work to adopt such a walk in life. They must be prepared to let interest lighten long hours. To return, however, to the work of the Agricultural Educational Committee, it may be said that the readers they have in contemplation, the Nature study leaflets they are preparing, and the strenuous efforts they are making to ensure the provisions of the New Board of Education being made useful, should give a groundwork upon which Technical Instruction can worthily build. Lord EGERTON OF TATTON, who presided on Friday, spoke of the work of County Councils which is familiar to our readers. We might point out that to Sir WILLIAM HART-DYKE, who was re-elected President of the Committee, must be given most of the credit for making

such work possible; he said that he felt every bit of his old zeal for education. He who begins to dabble with it, he continued, acquires a fascination for it which continually increases.

PERONOSPORA IN THE GREEK VINEYARDS.—During the past spring we had, through the Foreign Office, some discouraging reports as to the commercial prospects of the Currant and Grape crops at the ensuing gathering season; from Patras we have now to hand disquieting intelligence respecting the ravages of the *Peronospora* throughout the more extended district devoted to the cultivation of the above-noted crops. The pest appears to have been spreading and growing in activity since the early part of May, and when the news was sent on here the damage was estimated at 30 to 50 per cent. for the Currants, and 50 to 60 per cent. to the vintage. The weather continued to be favourable to the development of the pest, which is reported to be rapidly spreading. As both crops are liable to sustain damage from the malady until they obtain maturity towards the middle of next month, fears are naturally entertained that a very large proportion of both crops will be lost, unless some favourable change in the weather suddenly arrests the progress of the disease. As to remedial measures, sulphate-of-copper and lime dissolved in water to the extent of 1 to 2 per cent., and then sprinkled over the plant, is considered a remedy or preventative against the *Peronospora*; but although this method has been largely adopted by most cultivators, the result has only been partially successful. It may be noted that, as the welfare of most classes of the population in the Patras district is bound up in the success of the two crops mentioned, it will readily be understood what a calamity may ensue should the disease not be checked. It is reported from Nauplia to-day that the crops of Sultanias has also suffered severely.

MEETING OF THE GHENT CHAMBRE SYNDICALE.—At a recent meeting of the Belgian *Chambre Syndicale* of Ghent, Certificates of Merit for Novelty were awarded to—Seedling *Rhododendron* Madame Aug. Boelens, shown by M. Aug. Boelens; R. *Mémoire de Dominique Vervaeue*, MM. Vervaeue-Verraert et Cie.; Lilac *Président Oswald de Kerchove*, M. Alph. Moreels (*par acclamation*); to *Cypripedium*, shown by M. Florent Pauwels of Antwerp; *Dracena* The Sirdar, shown by M. Ed. Pynaert Van Geert; *Araca* *Baueri aurea striata*, from M. V. Vandeweghe; to *Lobelia* "Surpasse Admiration", from M. D. Vriesere-Remens (*à l'unanimité*); *Phajus* Cooksoni, M. G. Vincke-Dujardin of Bruges; to *Cattleya Mossiae* Vinckeana, also from M. Dujardin (*par acclamation* and *avec félicitations du Jury*); to *Laelio-Cattleya Hippolyta*, also from M. Dujardin; to *Odontoglossum crispum* La Lys, from the Société Anonyme Horticole La Lys of Peterghem-lez-Deynze; to O. *Andrianæ*, shown by the Société Anonyme Horticole Horticulture des Flandres (*à l'unanimité*); to O. *Andrianæ* var. *Etterbeckense*, shown by M. Fl. Claes, of Etterbeck, Brussels; to O. *crispum* var. *Madame Fl. Claes* from the last-named exhibitor, and for *Pteris Rochfordi*, sent by M. Ed. Pynaert Van Geert (*par acclamation*). Certificates for blooming plants were allotted for *Laelia grandis tenebrosa*, from M. L. de Smet-Duvivier (*à l'unanimité*); for *Cattleya Mossiae splendida*, from M. Aug. Boelens; varieties of *Odontoglossum*, from M. Fl. Claes (*à l'unanimité*); *Cattleya Mendeli grandiflora*, from M. G. Vincke-Dujardin (*à l'unanimité*); C. *Mossiae Reineckiana*, also from M. Dujardin; and for C. *Mendeli*, from M. Th. Pauwels. Certificates of Merit for cultivation and flowering were awarded to *Cattleya Mendeli* var., from M. G. Vincke-Dujardin; *Boronia polygalifolia*, from M. G. Fretin; and B. *elatior* (*à l'unanimité*), also from M. Fretin; and a series of *Cattleya Mendeli*, from M. M. Verdonck. A Cultural Certificate was given for *Araucaria Joseph Napoleon Baumann*, from M. Bernard Spaë (*à l'unanimité*); and Honourable Mention for

novelty for seedling *Rhododendron* (grafted in 1897) Mlle. Madeleine Kickx, from M. Paul Kickx. Honourable Mention for cultivation was awarded for *Gardenia radicans* fol. var., from M. Jules de Cock; and for *Kentia Forsteriana*, from M. Louis Cardon.

M. ERNEST ROZE.—We learn with great concern of the death of this gentleman, a well-known botanist, and a contributor to this Journal. His last work was one on the *History of the Potato*. He also wrote much on the diseases of plants, and on cryptogams generally. He died on May 25, in his sixty-seventh year.

MR. GEO. GORDON, V.M.H., Editor of the *Gardeners' Magazine*, has just sustained a bereavement in the death of his eldest son, GEORGE, on the 28th ult., aged thirty-two. We have frequently met deceased at horticultural exhibitions, and our readers will feel with us much sympathy for Mr. GORDON in his trouble.

BACTERIA.—Dr. MACFADYEN and Mr. S. ROWLAND have contributed to the Royal Society the results of some researches tending to show that no appreciable influence was exerted on bacteria when exposed for 20 hours to the temperature of liquid air (−183° C.). After exposure for seven days to −190° C., not the slightest structural alteration was visible, and no impairment of vitality was perceptible.

"FLORA OF TROPICAL AFRICA."—We are glad to announce the publication of the second part of Vol. 5 of this important work, the issue of which, after being suspended for several years, is now being pushed on as rapidly as is consistent with accuracy. The present part contains the remainder of the *Acanthaceae*, by Mr. C. B. CLARKE; the *Selaginæ*, by Mr. ROLFE; the *Verbenaceae*, by Mr. BAKER and Dr. STAFF; and part of the *Labiatae*, by Mr. BAKER.

SALES OF ESTATES.—Among recent sales, the following may be of interest to horticulturists:—

Messrs. FRANKLIN, GALE, & NEWTON, brought to the Mart a picturesque residential and agricultural estate in Berkshire, known as Rush Court, on the Upper Thames, between Shillingford Bridge and Wallingford, containing an entire area of 384 acres, which sold for £17,500. Blenheim House, at Benson-on-Thames, sold for £1,500. The Homer Estate at Ipsden, &c., Oxon, realised £1,000.

Messrs. WM. R. NICHOLAS & Co. placed Wick Court, an Elizabethan residence near Warmley, Gloucestershire, and nine acres, for £2,500; but other residential property—Winsley Chase, at Bradford-on-Avon, Lymington House, at Medstead, Hants—were returned to them.

Messrs. ALEX. H. TURNER & Co.'s list contained some good houses in different districts, one of which, Stratton House, a quaint, old-fashioned residence, and three acres at Biggleswade, was sold for £2,000; but The Grange and 117 acres at Lambourne and Yarlinton, and two acres at Horsell, were bought in at £1,500 and £2,900 respectively.

Ashurst Place, a freehold residential property within three miles of Tunbridge Wells, comprising a commodious house, stabling, farmery, lodge, ornamental and park land, &c., forty-one acres in all, of which about four acres are devoted to pleasure grounds. This was bought in at £20,000 by Messrs. E. & H. LUMLEY.

Imber Court, at Thames Ditton, a favourite resort of Charles I., and the abode of several celebrated statesmen, was offered as a residence with possession, with a prospective building value; but neither the historical associations nor the allurements of nearly a mile of building frontages, saved it from withdrawal at £13,900. Bankfield, a freehold country residence at Charlwood, with four acres, was unsold at £2,745; also Cleveland, and an acre of grounds, Wimbledon; The Fishery, and twenty-six acres, Maidenhead.

A freehold detached residence, at Shortlands,

— EXPOSITION UNIVERSELLE DE 1900 —

CONCOURS DE PLANS DE JARDINS

— Groupe VIII — Classe 43 —

PLAN N° 1



FIG. 3.—PLAN OF A GARDEN PREPARED FOR COMPETITION AT THE PARIS EXHIBITION BY MR. W. W. MILLER. (SEE P. 14.)

W. W. Miller
Landscape Architect
New York, England

"VACUNA"

known as Ellangowan, with grounds of nearly an acre, sold for £2,500; Sutton Lodge, at West Molesey, and nine and a half acres, freehold, for £2,400; a freehold paddock of nearly two acres, at Pinner, for £1,430.

A freehold family residence known as Boldrewood, Bycullah Park, and tastefully laid out grounds, of an acre, let at £130, which sold for £3,050.

Included in Messrs. STIMSON & SONS' list of such properties were The Shrubberies, a bijou residence at Muswell-hill, term sixty years, ground rent £8, which fetched £1,250.

At the Auction Mart, Tokenhouse Yard, E.C., the freehold estate known as The Moat, Rugby, with family residence, stabling, gardens, paddocks, &c., covering an area of about eight acres, realised £16,000; Mervil Hill, Witley, a freehold modern residence and six acres, was disposed of for £5,250. On Wednesday the freehold residential and building estate known as The Culvers, Carshalton, Surrey, with pleasure-grounds and park of about 77½ acres, the greater portion of which area is ripe for immediate building operations, was submitted by order of the trustees and executors of the late owner, Mr. JOHN PETER GASSIOT, and withdrawn at £23,700; whilst the estate adjoining, known as The Limes, 68½ acres, freehold, was similarly dealt with at £7,800, or £120 per acre.

MR. W. MILLER'S PLAN OF A GARDEN AND GROUNDS.

The plan, of which an illustration (see fig. 3, p. 13) is given in the present issue, is one that Mr. W. Miller, late gardener at Combe Abbey, Coventry, has sent in competition to the International Exhibition in Paris. Our continental neighbours are past-masters in the seductive art of landscape gardening, and doubtless Mr. Miller's plan will have to meet very keen competition; all the more honour to him for his courageous challenge. Doubtless our readers will find, beyond the mere prettiness of the plan, several praiseworthy points, and others about which they will differ from the designer. The praiseworthy ones are the ample protection afforded by the wood to the N. and N.W. of the mansion, and the shelter belts on the W. and S.S.W.; the position of the kitchen and fruit gardens, and forcing-ground and glasshouses, the workshops of an establishment at a considerable distance from the dwelling; and the various vistas opening out into the surrounding landscape. These are all good.

THE WEATHER IN WEST HERTS.

FOR nearly a fortnight there has been only one warm day, and that was but moderately warm for the time of year. On the other hand, during that cool period, there was only one day which was exceptionally cold, and no really cold nights; consequently the soil temperatures, both at 1 and 2 feet deep, are somewhat below their respective averages for the beginning of July. Rain has fallen during the past week on four days, but to the aggregate depth of less than half an inch. There has been lately a great lack of sunshine, the average daily record for the last nine days only amounting to about 3½ hours, whereas a seasonable record would be about six hours a day. The hybrid perpetual Rose, Marie Baumann, which may be regarded as a mid-season variety, was first in bloom in my garden on the 1st, or five days later than its average date for the previous twelve years.

JUNE.

Taken as a whole this was rather a warm June, but only for a few days was the warmth in any way exceptional. Rain fell on fifteen days, to the total depth of about 2½ inches, or very nearly the average quantity. But the ground had become so dry owing to the small rainfall of the three spring months, that it was only towards the end of June

that any measureable quantity of rain-water came through the 2½ feet of soil in the bare soil percolation gauge, and none whatever through the gauge on which short grass is growing. This was a dull June, the mean duration of sunshine falling short of the seasonable amount by more than half-an-hour a day. The winds were as a rule light, and came for sixteen days from some point between south and west. *E. M., Berkhamsted, July 3.*

THE BULB GARDEN.

PANCRATIUMS.

PANCRATIUMS are sometimes confused in gardens with Hymenocallis and allied genera having similar flowers, inasmuch that such few notes as are published about them in gardening periodicals, without a description, however short, fail to impart trustworthy information. Pancratiums are distinct from Hymenocallis in having small black seeds, and very glaucous linear leaves; the seeds of Hymenocallis are fleshy, greenish, or ivory white, and are larger than a filbert nut, the leaves are green. A further distinction is to be found in the flowers: those of Pancratium have relatively short segments, short filaments, and large staminal cups; the reverse prevailing in Hymenocallis proper. Ismene, a subgenus of Hymenocallis, is obviously distinct from Pancratium in its acutely incurved filaments, and in the long necks of the bulbs formed by the sheathing bases of the leaves.

The flowers of Pancratium are extremely beautiful, being pure white, of elegant form, membranous in texture, and exquisitely fragrant. All the varieties grow best in a light sort of soil, with a few handfuls of washed gravel or finely broken sandstone surrounding the bulbs to preserve them from injury from stagnant water. Some are sufficiently hardy to grow well out of doors, others require greenhouse or stove temperature. All require to have the bulbs ripened thoroughly by exposing the pots or borders to full sunshine when growth is finished. A few species refuse to grow under cultivation, notably *P. tortuosum*, and one or two others from very dry regions. As they are never likely to prove useful garden plants, I propose to omit them here; other species which were recorded in Dean Herbert's time, are now practically lost to cultivation.

P. canariense is a greenhouse plant of considerable merit, with handsome, very glaucous, leaves; a tall peduncle, bearing a dozen pure white flowers, each measuring 2 inches in length and span. The segments are lanceolate, an inch long; the staminal cup is under an inch long, very delicate in texture, and toothed between the fall ends of the short incurved filaments. The flowers appear in succession in early winter. I have a strong-growing form in these gardens, which has proved to be superior to the type, both in the size of the entire plant and the individual flowers. Also, an hybrid between this species and *P. maritimum*.

P. collinum, a rare species from Algeria, grows fairly well with the protection of a heated frame. The leaves are slightly glaucous; the flowers measure 2 inches in length and span, and much resemble those of *P. canariense*, but with a wider staminal cup, shorter filaments, and linear segments. The entire plant is much smaller. It is a pretty dwarf species, but rather difficult to grow well, and equally difficult to obtain in good condition.

P. illyricum, a well-known inhabitant of our gardens for many years; the leaves are glaucous, 1 to 2 inches broad. The star-like flowers are produced in handsome umbels of from eight to ten, each measures 2½ to 3 inches in length and span, and has a greenish tube, and lanceolate segments, 1½ to 2 inches long. The staminal cup is very short and collar-like, and is furnished with long, cleft, flaccid teeth between the free ends of the filaments. It is a fine plant for the warm border

and does fairly well among the roots of trees in a dry situation, where little else will grow. The bulbs should be planted 4 inches deep, in order to protect them from severe frosts, for though they will stand being frozen several times in the course of a winter, they are liable to injury if they have to endure a severe frost extending over several weeks without protection. There are two or three forms of this plant in cultivation, differing from the type chiefly in the size of the flowers and breadth of the leaves; the plant flowers at midsummer. It has been known to cultivation for nearly three-hundred years.

P. maritimum.—Few plants are so handsome as this when in flower. The leaves are glaucous, 2 feet in length; the flowers are borne in elegant umbels of eight or more, each measures 3 to 4 inches across, and consists of a funnel-shaped tube, 3 inches long; linear segments, 1½ in. long, and a staminal cup 1 inch long and wide, surmounted by very short stamens. The plants grow well on a warm border, preferably under a heated wall, where they will thrive and flower profusely. The best batch of plants bearing the largest flowers I have ever seen are growing in front of the Orchid-range at Kew, where they grow like weeds, and form one of the chief features of the gardens in their season; it is a plant everyone can grow, and few fail to appreciate. It has been known for over three centuries.

P. Sickenburgeri.—A rare species most like *P. maritimum* in the flower, with spirally-twisted leaves. I have not seen it outside botanic gardens, and only once in flower; it requires greenhouse treatment. It comes from Egypt.

P. verecundum.—This is another very old plant, now rarely met with. The leaves are numerous, 1 foot long, and 1 inch broad. The flowers are particularly fine, and average six to the umbel, each being 4½ inches in length, and nearly as much across. The staminal cup is as large as that of *P. maritimum*, being 1 inch in length and span. This plant is the only one of the large-flowered set remaining in gardens, save *P. tortuosum*, which nobody seems able to grow. I have a potful of the latter plant from Aden, but the bulbs decrease yearly. *P. verecundum* is a stove-house plant.

P. zeylanicum.—A very neat, single-flowered species, requiring stove-house treatment. The leaves are lanceolate, glabrous, green in colour; the peduncle is a span high, bearing one beautiful flower about 4 inches across, with lanceolate segments, and a delicately plicate staminal cup 1½ in. across, toothed with large, cleft, flaccid teeth between the filaments. The whole flower is semi-transparent, and a marvel of delicacy. It lasts only for a few days. The plants should be grown closely together (say six to a 6-inch pot), in a mixture of turfy loam and crushed sandstone, or similar material. It is a little difficult to keep in good health. The whole plant is very slender, requiring some care in its management. The plant extends over tropical Asia. I have it also from Madagascar.

Propagation.—Most Pancratiums produce seeds freely if carefully fertilised, mostly averaging twenty to thirty to the capsule. These should be sown as soon as they are ripe, in a porous compost, and very carefully watered till the resulting plants become strong. Many of the hardier species produce offsets in some number, and may be readily increased by this means. *Geo. B. Mallett, Isleworth.*

HOME CORRESPONDENCE.

THE ROYAL HORTICULTURAL SOCIETY'S GARDEN.—Since the last General Meeting no official statement on the subject has been made, and it may not unreasonably be assumed that the strong and almost unanimous opinion expressed in the letters from Fellows which have appeared in the horticultural press in favour of retaining the Chiswick Gardens for such cultural operations as are

really indispensable, may have had weight with the Council, and that that body will not press upon the Fellows a scheme which is repugnant to so many. Before any general meeting is called to decide for or against any suggested site for a New Chiswick, it is certainly reasonable to ask that those who support the Society may be definitely informed:—(a) The reasons which appear to necessitate a removal from Chiswick. (b) The nature of the work the Council propose to undertake in a New Chiswick, and why they consider it essential that the Society should embark upon such work. (c) Detailed information as to operations necessary to transform any suggested site into a national horticultural garden worthy of the Royal Horticultural Society, remembering that to acquire any new garden, and to stop short of making it all it ought to be, would place the Society in a position few if any could desire to see it occupy; and (d) Full and detailed estimates of the cost of these undertakings, including the erection of modern glass structures suitable for all kinds of cultural operations, and which would at least compare favourably with the best that exist in private gardens. Practically we are without any such necessary official information in regard to the site recommended by the Council at the last general meeting. The aim of all Fellows should be to make the Society national in the truest sense of the word—and so far it seems evident that the vast majority of Fellows believe this can best be done by continuing the policy which has already proved so successful, i.e., through the excellent work of the various Committees to attract to the fortnightly shows, so ably organised by Mr. Wright, the finest products of horticulture throughout the kingdom—and when the present place of meeting becomes inadequate for the requirements of these shows, to appeal to the Fellows and the public at large for the means necessary to procure some better home for the Society. It cannot be supposed that the present unequalled roll of members has been secured by any cultural operations at Chiswick or elsewhere, but undoubtedly the attractiveness of the fortnightly exhibitions, and of the annual Temple Shows, has been the chief, if not the only cause conducing to this most satisfactory result. *Arthur W. Sutton, Reading.*

THE ROYAL HORTICULTURAL SOCIETY AND THE ROYAL BOTANIC GARDENS.—The short paragraph at p. 419, giving the purport of a recent reply by the Secretary to the Treasury to a question put in the House of Commons comes at a very interesting time. It has been recently mooted in these columns that negotiations be entered into between the council of the Royal Horticultural Society and the Royal Botanic Society, by which in the gardens of the latter a suitable home for the former society's shows and meetings might be found. That there is in the suggestion much that is plausible I have no doubt, but it is in relation to any such combination difficult to forget the unhappy results which followed ultimately upon the connection of the Royal Horticultural Society some years ago and the Commissioners of 1851, when the Royal Horticultural Society eventually became the lamb, which was almost swallowed by the commissioners' tiger. We want no such conjunctions in the future. You ask at the foot of that paragraph, When is the Royal Horticultural Society to receive some such government recognition as the Royal Botanic Society obtains? If government recognition results in the production of a society that is absolutely worthless and a sham, and is hopelessly in the mire, the less government extends its recognition to the Royal Horticultural Society the better, even were it possible for the latter body to obtain in relation to the Botanic Gardens, honourable and equitable conditions of use. I fear the holding of the usual meetings there would result in failure. In any case, unless the council of the Royal Horticultural Society could obtain an absolutely free hand, it had a thousand times better stop where it is. Of course, did the effete body cease to exist absolutely, and it would be an excellent thing were that so, then the Royal Horticultural Society might stand in a totally different position in relation to the Botanic Gardens succession. D.

ROYAL SOVEREIGN STRAWBERRY.—I am sending you a Strawberry (Royal Sovereign) which has been shown to my friends for the last two days, and consequently has lost weight. When first gathered it turned the scale at 2½ oz. good weight.

Kindly inform me through the medium of your paper whether this is anything like a record for the variety. It was grown on one of last year's runners. *Robert King.* [Your fruit consisted of three united. We had lately a single one of equal or greater size. ED.]

RATING GLASSHOUSES IN MARKET GARDENS.—In view of a general election taking place in the near future, I beg to suggest that all market-gardeners—sufferers by the adverse decision of the House of Lords when the ruling of the late Master of the Rolls was appealed against—should endeavour to obtain a promise from the several parliamentary candidates to introduce or support any Bill that may be introduced in the next Parliament to enable market-gardeners in possession of glass-houses to benefit, as they were meant to, by the Agricultural Rates Act, 1896. The said glass-houses used in raising and producing crops that the fickle climate of this country will not admit of being done satisfactorily in the open, being now taxed as buildings, press rather hard on English growers, who have to compete with growers in the Channel Islands and France, who, having more favourable climatic conditions, are able to secure the same description of produce out-of-doors at a minimum cost. In conclusion, I would suggest that each market-gardener—and the number is legion—be supplied by the Secretary to the Market Gardeners, Nurserymen, and Farmers Association, with one or two leaflets, giving full particulars of our grievance from the beginning, to be given to the respective candidates in each parliamentary district, thereby furnishing them with a brief. *H. W. Ward, Lime House, Rayleigh, June 25, 1900.*

CLEMATIS MONTANA AS A VERANDAH CLIMBER.—In the village of Bisham, in Berkshire, and near to its ancient ghost-haunted abbey, the Nepaulese mountain Clematis can be seen in its season in all its delicate beauty. In the case of one residence in particular, it has been permitted to spread itself over the verandah, and its white blossoms can be seen covering a very large space. Here and there some of its festoons have become intermingled with other subjects, thereby heightening the effect. *C. montana*, when in a suitable position, rapidly covers spaces in need of being covered; and then having attained a certain size, its marvellous freedom of bloom becomes apparent, and may be said to correct its growth. Probably some pruning is afforded this fine specimen, but it has the appearance of being left pretty much to itself. *C. montana* and its allies are not fastidious as to soil, but is found to do well in any good earth; though in order to maintain its vigour and wealth of bloom, some occasional enrichment is necessary. Planters should be careful when they plant to place it in a well-drained spot, where the soil is not likely to become water-logged. *R. D.*

YUCCA GLORIOSA.—Is it unusual for a shoot produced last summer to flower the following year? [No.] This is what is happening in the case of a plant growing in the forecourt garden of a neighbour of mine. The specimen is strong, and from 5 to 6 feet in height; it is in the middle of a well-manured flower-bed, and last year it threw a noble inflorescence. After flowering, two shoots were put forth from the centre, one of these was removed, the other allowed to remain. It made an amazing growth this season, and is now sending up a strong flower-stem in its turn. It would seem to appear that a certain degree of vigour influenced the plant in throwing up its inflorescence; while the theory held by some that the plant flowers only after an interval of years is not borne out by experience. *R. D.*

CRATÆGUS.—After reading Mr. George Nicholson's letter on the "Cratægus," I have sent you a specimen for identification (*Cratægus crus-galli*). There are several of this variety growing here in the hedgerows as standards. I should think they would make good hedges, as the heads of the standards are quite impenetrable, on account of the large spines. I might also mention that after seeing some of your correspondents remarking on the *Ampelopsis* fruiting, I gathered seeds and sowed them, I have now about three dozen young ones, from 1 to 2 feet in height: the seeds took about two months to germinate. *J. S., Bath.*

ANTS IN THE ORCHARD.—Mr. Thos. Grunsell, of Goulburn, writes:—"I notice in several late numbers of the *Gazette* questions asking how to

destroy ants. I would like to ask why people desire to destroy these insects. I have had over forty years' experience in gardening and fruit-growing, and find ants my best friend, and would be sorry to lose them. I never lose anything sound, either fruit or vegetable, by them, but find that they clean off many small, destructive insects from the trees. I notice one writer advising lime; that he scattered lime under infected Peach-trees to keep away the ants, and the trees flourished after it. But I venture to tell the writer that the ants did more good to the trees than the lime, though lime does good if put on the trees." Of course, everyone is at liberty to hold his own opinion about questions of this kind. It must be remembered, however, that the mere presence of ants in large numbers upon a tree is a sign that there is something wrong with it, and if the attraction be removed, the ants will not return. *The Agricultural Gazette of New South Wales.*

LILIUM MARTAGON.—It may interest your correspondent to know that *Lilium Martagon* grows well in my garden, which is rather dry. The soil is a sandy-loam, formed chiefly from the Hythe beds (greensand). The plants grow in the shade, facing north, in a rather crowded border. The largest plant of the white variety is nearly 5 feet high, and has twenty-one flowers on it; the smallest about 2½ feet, with five flowers on it. The white variety is already in blossom, but the purple has not opened yet; the white variety is quite glabrous, but the flowers, flower-stalks, and flowering-stem of the purple have a greyish appearance from the presence of a number of hairs. I water the plants freely when the young stems appear if the weather is dry. *E. M. Holmes, Ruthven, Sevenoaks.*

EARLY CAULIFLOWERS have turned out unusually fine this year. The weather, owing to the alternating sunny and showery periods, encouraged a freedom of leaf-growth. I generally depend upon Veitch's Early Forcing for my first cutting, sowing the seeds early in February under glass, pricking them thinly into shallow boxes, and planting them on an open sunny border early in the month of April. A sharp frost followed the planting this year, which gave the plants a check, giving the leaves a scorched appearance. An application of weak liquid-manure quickly caused a renewal of growth and extra good crop. *W. S.*

DECAY OF THE ASH IN MIDDLESEX.—When driving through the district of West Middlesex a few days ago, I noticed in the part of the county reaching from Ealing away to Hillingdon, symptoms of decay in many of the Ash-trees growing in the hedgerows. Some were quite dead, others partly so; in some there could be seen at the tips of the branches the first beginnings of decay. Old and young trees alike were affected in this way; and a few days later, when in the neighbourhood of Wendover, Bucks, I noticed the same indications, but not to such a perceptible degree. What is the probable cause of this decay? Can it be traced to the dry summers of the past few years? That many large trees have suffered severely during the past four years there can be no doubt; but I do not know of any reason why the Ash, which Gilpin terms the "Venus of the Woods," should be so strikingly affected. It has been said of the Ash that by rapidly exhausting the soil of its organic materials, it does injury to the trees which grow in its neighbourhood, and in consequence few plants will ever thrive or grow very near it. Is this property of exhausting the soil the cause of the decay alluded to? Gilpin says that "the leaf of the Ash is much tenderer than that of the Oak, and sooner receives impression from the winds and frost." Can the cold winds which were so prevalent in the spring, and the frosts which occasionally accompanied them, have so affected the young growths as to have caused the decay? *R. D.*

BUSCOT PARK HERO MELON.—The Melons which were exhibited at the Temple Show on May 23, 24, and 25, by Mr. Baston, of Buscot Park Gardens, and received an Award of Merit, consisted of a variety raised by me when I was Head Gardener at Buscot Park in 1896. It was the result of crossing Hero of Lockinge and Suttons' Imperial Green. I had two good seedlings from the cross, and still hold the seeds of the same, and hope to present fruits of the best of my seedlings at the Drill Hall shortly. *Wm. Meads, Free Chase, Haywards Heath.*

GRAPE VINES AT LOCKINGE.—The magnificent bunches of Grapes exhibited from Lockinge at the Temple Show this year induced me to accept an invitation from Mr. Fyfe, the gardener, to visit Lockinge Gardens during the early days of this month. These gardens are extensive, and filled with interesting things, to do justice to which would take up several pages of the *Gardeners' Chronicle*. I was chiefly interested in the Vines. A fine range of glasshouses covers a south wall, and it includes five Vineries, two Peach-houses, one Fig-house, and one large Rose-house, in which has been planted largely the famous "Fortune's Yellow," which has been so splendidly shown on many occasions at the meetings of the Royal Horticultural Society by Mr. Fyfe. The early vinery, in which the exhibited bunches had been grown, contains a mixed lot of Vines, viz., Black Hamburgh, Foster's Seedling, and Madresfield Court, and many of the bunches had been cut, but enough were left to show how good the Grapes had been, and that the crop was a heavy one. I counted on two Vines of Madresfield Court no fewer than fifty bunches, many of them of 3 lb. and upwards, and all splendidly finished. The second early vinery is planted with Muscats solely, each Vine carrying twenty-five bunches, mostly shapely, very large, and evenly set. The third vinery contained Black Hamburgh Vines, with an average of twenty-eight bunches per Vine. They are giving great promise. Then we came to a mixed vinery—Black Alicante, Lady Downes, and Gros Colman, each Vine being well cropped with fine bunches. All the Vines are aged, but Mr. Fyfe, by his methods, has put new life into them; for when he took charge of the gardens, they were in a very unsatisfactory state. The last vinery in the range was planted four years ago with Muscat of Alexandria and Madresfield Court, and this year these Vines are allowed to carry six bunches each; and should the fruit finish as it promises to do, Mr. Fyfe will be able to exhibit Grapes as good in every point as those shown at the Temple. Anyone interested in the cultivation of the Grape-vine would find much to instruct and interest him at Lockinge. *Rover*.

TRANSPLANTED EVERGREENS.—The recent considerable rains have come too late to bring back to life the numerous late planted evergreens of various descriptions, that are now seen dead in so many directions. Very late planting of such things, especially during a dry spring, is always coupled with much uncertainty as to results, but it is specially so in the case of large specimens, or those which have been established a few years and have not been prepared for transplanting, as is the common rule in nurseries, where nearly everything intended for sale gets a shift at least once in two years. All evergreens are much more susceptible to harm through late transplanting than are deciduous shrubs. Still, in all cases it is best to transplant, if possible, in the early winter, especially when it is stuff that has had no previous preparation. In dry seasons, thoroughly moistening the roots prior to replanting is too much neglected, where because some soil may be attached, it is not advisable to give the roots a good soaking, at least it should be done when set into the holes made to receive them, a little fine soil being cast about the roots temporarily, until the filling in is completed. *A. D.* [With our experience of a hotter climate than that of these islands, we would advise those who must plant late, not only to apply a mulch to the soil, but to shade the tops of shrubs thinly with long straw or bracken, and keep it on till growth has fairly begun. It may be regarded as an eyesore in some places, but it is better than losing the plants; and, after all, it is only temporary. We have sown Maize among late-planted trees and shrubs, and covered the ground with Gourds and Vegetable Marrows, with the result that the shade of the Maize stems and leaves saved their lives, but that is not possible here. Sheep-hurdles are good shade-dispensers for small shrubs, &c. *Ed.*]

THE SHROPSHIRE HORTICULTURAL SOCIETY.—I am pleased Mr. Adnitt has satisfied us that in future the flowers in the great Grape classes will be judged separately. [This was made clear on p. 169, in March last. *Ed.*] This is admission sufficient that floral decorations counting points led to confusion. I did not make my remarks thereon without having experience of a previous precedent. This was at one of the Shropshire horticultural shows. We were judging collections of fruit, and I had for my colleague a man of high horticultural

standing, and one for whom I have the greatest respect; though, it must be admitted, that horticultural judges are no more infallible than South African Generals. In one of these groups flowers were in stronger evidence than in some of the others; these seemed to have lured the eye of my colleague, and he remarked, "We must go here for the 1st." "Not so," I replied; "I am not sure if we can go there even for the 2nd. We are judging fruit, not the flowers." When he had time to look round, we had no difficulty in agreeing. I believe I had a slight advantage over my colleague in this instance, for I had already taken the opportunity of a few leisure moments, and formed my own opinion of the respective merits of each group. Now, as to the table decorations. We saw in the outcome of the above that the laws and regulations of the Shropshire Horticultural Society are not like those of the ancient Medes and Persians, "that cannot be altered." I believe it is the continuous alteration and improvement of those from year to year that have brought about such unequalled success and perfection to the Shropshire Horticultural Society. But might not the Society with advantage alter their regulations as regards these exhibits, and admit dinner-services of electro-plate, silver, or even gold? The fruit and flowers are grown under the fostering care and best horticultural skill our country can produce. Surely, then, the whole thing is deserving of being made artistically complete by being served up in the most elaborate forms of beauty and workmanship that the hand of either gold or silver-smith could produce. Nature and art would then be placed in such juxtaposition as to reflect a combination of beauty, grace, and dignity, the one upon the other. The Shropshire Horticultural Society, of whom Messrs. Adnitt and Naunton are the honorary working bees, is not in the habit of doing things by halves. *W. Miller, Berkswell*.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JUNE 19: Rose-rust.—Some leaves sent by Rev. H. C. Brewster, of South Kelsey Rectory, were attacked by an acidium. Mr. Plowright reports that it is "The acidiospore of Phragmidium subcorticatum, formerly called *Uredo effusa*, or miniatum of older writers. These acidiospores are often preyed upon by some mites, as in the present case, which becomes tinged with the orange colour of the spores, which they eat. On some of the leaves the uredospores are beginning to appear."

Potato crop defective.—Mr. F. H. Kettle, of King's Ford, Colchester, forwarded samples, of which he writes:—"The Potato crop in this district is a very uneven one, and various reasons are suggested for it." The specimens sent are Bresset's Prolific, and they are typical of plenty of others in the store room. The samples were forwarded to Mr. A. Sutton, who reports as follows:—

"In reply to your inquiry, it is quite certain that Mr. F. H. Kettle is by no means singular in his experience of Potatoes coming up very unevenly this season. We hear from all parts of the country that such is the case, and all varieties appear to be suffering more or less from the same cause. Professor Gordon, of the Cheshire Agricultural and Horticultural School, Holmes Chapel, wrote to us recently on the same subject, saying that many of his Potatoes had only formed very weak spindly sprouts, no thicker than a knitting-needle, and there were a great many blanks in his crop; and his experience is the same as ours, that many of the tubers are quite sound and hard in the ground where they have made the thin weak sprouts complained of."

"It is remarkable that tubers which were 'boxed,' and very carefully sprouted before being planted, are just as much affected as those which were planted before any sprouts were made by the sets."

"Another interesting fact noticed on comparing the many hundreds of samples in our trial grounds is that the only case where Potatoes have started well, with strong and healthy growth, are those which were grown last year in Scotland, where the climate and soil are comparatively moister than in England."

"The only conclusion I can arrive at is, that in consequence of the excessive drought last year the Potatoes ripened prematurely, and owing to this the sets are not able to develop a healthy and vigorous growth this year. We find this especially the case with Potatoes which were grown last year on hot gravelly soils. The tubers affected with us in many cases produced shoots at the crown of the set, but these died off, and the later growth is being made from weakly shoots put forth by the side buds or eyes near the stem-end of the set."

"I can think of no possible remedy, and certainly in our experience we can remember no season when crops were similarly affected on so large a scale."

"Mr. H. S. Daine, of Woolfall Hall, Huyton, Liverpool, mentioned at the York Show that his crop was suffering in the same manner, and he had sent tubers to Professor Marshall Ward for examination, and would let us know his reply."

Carnations decaying.—Plants which had decayed at the base were received from Mr. R. Keeble, of The Pines, Horsall, Woking. Mr. Jas. Douglas reports upon them as follows:—

"It is not an uncommon occurrence to find that Carnations grown under artificial conditions will die, as the example enclosed has done. There is no disease, the roots have died owing to over-watering, or else, probably, the plants were allowed to become overdry; in this case the delicate root hairs are desiccated, and thus rendered useless. Too much water is then poured in, which makes matters worse. All plants suffer from this, and some die. Moreover, the dried peaty soil is unsuitable for Carnations. In my own large collection we lose a few every year; the roots perish from some cause not always easily determinable, but I regard it as a matter of watering. The use of artificial manure in the soil will cause deaths in Carnations when grown in flower-pots. I dropped the use of it because of this."

Grapes scalded.—Mr. H. Pethick, Trewartha, Weston-super-Mare, sent samples, upon which Mr. Douglas reports as follows:—"The Grapes sent are scalded, caused by insufficient ventilation, and probably too much moisture in the house. It occurs if the Grapes are entirely shaded by the leaves, and the Grape that suffers most from scalding is Lady Downes's Seedling. The Vine may be flourishing in every respect, but that does not matter; and it always happens when the berries have just passed through the stoning period previous to colouring. While stoning is going on—that is, the hardening of the seeds, the berries do not increase in size; they remain stationary for five or six weeks. At the end of that time the seeds have come to their full development, and the berries increase rapidly in size. This is the time that scalding will happen. It can easily be prevented by throwing open the ventilators to their full extent in hot weather; ventilation to a less extent should also be given at night. I must also add that the berries will scald even if the sun does not touch them."

Rose, Variegated.—Mr. G. Rawlings sent specimens of Rose-leaves variously spotted with yellow, some leaflets being entirely yellow-orange in colour. He writes as follows:—"The leaves sent are from a tree of Baroness Rothschild, a portion of which came variegated last year. I budded a few buds on some named varieties, from which those sent have been cut. They are much more highly coloured than those on the original tree."

Pears, Blackened.—Some fruit decayed, black, and attacked by fungi, were sent to Dr. W. G. Smith for examination. They were received from Rev. H. W. Fletcher, Bicker Vicarage, Boston.

Fruit & Vegetable Committee at Chiswick.

JUNE 26.—A meeting of the Fruit and Vegetable Committee was held at Chiswick on the above date, there being present—W. Marshall, Esq., in the chair; Messrs. G. Wythes, J. Smith, G. Woodward, Geo. Kelf, J. Willard, S. Mortimer, A. F. Barron, H. Esling, W. Gleeson, J. Basham, and A. Dean.

The attention of the committee was first directed to a collection of Peas, some of which were early, and some late. The recent rains had produced better results on these products than usual; hence, they were seen in their true character. The committee first carefully examined each row, some forty-five in number, of mostly new varieties. Ultimately, after subjecting each selected variety to close scrutiny, it was unanimously resolved to make Awards of Merit to Edwin Beckett, a Pea having a height of 3½ feet, and a heavy crop of fine green pods, the best of the whole batch, and very early; The Major, 4 feet, a free cropping variety, pods not large, but the Peas of excellent quality, and produced successively; and Monarch, 4 feet high, a capital cropper, having large pods of excellent quality. Several varieties were noted for inspection at a later date.

A collection of Lettuces raised from seed supplied by Messrs. HARRISON & SONS, of Leicester, was inspected, the best of which consisted of a remarkably good stock of All-the-Year-Round and Malta Cabbage varieties. To these, three marks were awarded, both being well-known old varieties. A good stock of a green Cos was left over till quite ready for use. A considerable trial of early Potatoes will be fit for inspection shortly, and of late ones at a still later date. In some cases here, as elsewhere, Potato plants are irregular. Probably the primary cause of irregularity is found in defective prior storing to the tubers, by those who sent them. Elsewhere complaints are almost universal.

Committees at the Drill Hall.

JULY 3.—ROSES.—The annual competitive show of Roses, which is held in connection with a meeting of the Royal Horticultural Society's Committees, took place on Tuesday last in the Drill Hall, James Street, Westminster. We are used to see the Hall very full on such occasions as this, and on Tuesday there was a very good show, but not so large a one as on June 27 last year, when the excessive number of exhibits forthcoming caused much inconvenience, and Mr. Wright's task of disposing of them was one of great difficulty.

The Roses staged in the competitive classes on Tuesday were of exceeding good quality, being specially remarkable for large size and substance. Indeed, these characteristics

may be looked for in most of the Roses to be shown this season, as the weather having been cool, and rain plentiful, the plants have not suffered from exhaustion as they have done for several seasons past, and the blooms have not been hurried. The chief difficulty of exhibitors will no doubt be to obtain their flowers free from storm marks. There were eighteen classes, and most of them were well contested. Details of most of them are given below. Excepting the Roses, there was not a very large display of exhibits, nor were there many valuable novelties before the Committees.

The FLORAL COMMITTEE recommended the award of a First-class Certificate to *Magnolia macrophylla*, an old plant, but a rather shy species to bloom; and Awards of Merit to a *Delphinium*, and a seedling *Heliotrope*.

The ORCHID COMMITTEE recommended a First-class Certificate to *Laelio-Cattleya Wiganie* and to *L. C. Henry Greenwood superba*; also Botanical Certificates to *Colax viridis*, and *Broughtonia sanguinea*.

The FRUIT AND VEGETABLE COMMITTEE gave a First-class Certificate to a new Pear, *Edwin Beckett*; and Awards of Merit to *Nectarine Lockerley Hall*, and to *Melon Free Chase Scarlet*.

In the afternoon, Mr. GEO. PAUL read a paper upon Roses, those garden varieties he cultivates so largely and so well.

At four o'clock, a special general meeting of the Fellows of the Society was held to adopt the new bye-laws that have been prepared. The results of this meeting are detailed on p. 10.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. R. Dean, G. Reuthe, Jno. Jennings, Chas. E. Pearson, Jas. Walker, Chas. E. Shea, G. H. Jenkins, W. J. James, C. J. Salter, Jas. Hudson, H. B. May, and E. T. Cook.

HARDY FLOWERS.

Mr. M. PRITCHARD, Christchurch Nurseries, Hampshire, in a group of hardy flowers included a magnificent bouquet of flowers of a new late flowering herbaceous *Pæony* named *Marie Lemoine*. It has large double flowers, white or pale cream colour, a tinge of rose colour very occasionally showing itself. The white flowering variety of the *Martagon Lily*, *Hemerocallis Thunbergii*, *H. aurantiaca major*, *Eryngium alpinum*, *Coreopsis grandiflora*, *Lilium umbellatum*, *Gloire de Gold*, *Clematis erecta*, a herbaceous species, with numerous, rather small, white flowers; varieties of *Iris xiphoides*, and blooms of *Marillac's Water-Lilies* were some of the good species included in this very fine group (Silver Flora Medal).

Alpine plants in pots were shown by Messrs. T. S. WARE, Ltd., Feltham. The *Nierenbergia rivularis*, the intensely blue-flowered *Lithospermum prostratum*, *Campanula G. F. Wilson*, and another hybrid, *C. turbinata* hybrida, with pretty bluish-purple flowers, 5 inches high; *C. garganica alba*; also larger-growing plants, as *Lilium Humboldtii*, *longiflorum*, *Gaillardias*, *Heuchera sanguinea*, &c. (Silver Banksian Medal).

Messrs. KELWAY & SON, Langport Nurseries, Somerset, again exhibited *Delphiniums* and *Gaillardias*, including very beautiful varieties of each. Of *Delphiniums*, the variety *Beauty of Langport*, with cream-coloured flowers, was the only one not purple or blue. Some of the most striking of the *Delphiniums* were Mrs. Toms (single), pale blue, with white centre; *Norah Green*, deep blue, with white centre; *Eugène Sandow*, deep purple; Mrs. Tree, pale blue and mauve colour; *Delicacy*, J. S. Sargent (single), deepest blue and purple; *Clovelly* (double), mauve, &c. There were very large flowers of *Gaillardia*, also of *Scabiosa caucasica alba*, *Gillenia trifoliata*, *Irises*, &c. (Silver Flora Medal).

Varities of *Lilium Thunbergianum* was a feature in an interesting group of cut flowers from Messrs. WALLACE & CO., Kilnfield Nurseries, Colchester. The very deeply coloured *Van Houtte*, and the yellow-flowered *Orange Queen*, with small purple spots, offered a great contrast; *Alice Wilson* is rather paler in colour than *Orange Queen*. Amongst some good *Lilies* well represented were *L. Henryi*, *L. Hansonii*, the much spotted *L. pardalinum californicum*, with petals recurved quite back; *L. japonicum*, &c. Of *Irises* we noticed *I. Monnierii*, that gained an Award at the last meeting, *I. aurea*, &c. The beautiful *Calochorti* were represented in a number of varieties of the large-flowered section (Silver Banksian Medal).

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., had a group of cut hardy flowers, which included some pretty varieties of *Iris xiphoides*, the orange-yellow flowered *Iris aurea*, *I. Monspur* and varieties, *Eryngiums*, *Calochorti*, *Campanula persicifolia alba grandiflora*, &c. There were also plants in pots, including *Lilium monadelphium Szovitzianum*, with yellow flowers, spotted on either side of each petal with small brown spots (Silver Banksian Medal).

A large group of hardy flowers was shown from the gardens of the DUKE OF RUTLAND, Belvoir Castle, Grantham (gr., Mr. W. H. Divers), which included a grand lot of herbaceous and other species. A fine spike of the yellow-flowered *Verbascum olympicum*, of *Tropeolum polyphyllum*, *Gentiana lutea*, &c. (Bronze Flora Medal).

Mr. B. LADHAMS, Shirley Nurseries, Southampton, made an exhibit of *Gaillardias*, and varieties of *Campanula persicifolia*. One of the latter, named *Porcelain*, had single blue flowers. *Coreopsis Eldorado* is a magnificent variety, having bright gold-coloured flowers of remarkable size (Bronze Flora Medal).

Mr. A. PERRY, Winchmore Hill, London, N., exhibited herbaceous *Phlox glaberrima*, with mauve coloured flowers; *Campanula puloides* ×, described as a cross between *C. × G. F.*

Wilson and *C. pulla*. It has larger flowers than *G. F. Wilson*, and is of the same colour as that variety. *Sedum Kamschatcicum* with variegated leaves is a very effective hardy dwarf foliage plant.

Anchusa italica, varieties *superba* and *coelestina*, were shown by J. B. FORTESCUE, Esq., Dropmore Gardens, Maidenhead (gr., Mr. J. A. Rogers). The variety *superba* has deeper coloured flowers than *coelestina*.

ROSES AND MISCELLANEOUS.

Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, made a grand exhibit of cut Roses, in as many as ninety different varieties, most of which were shown in large showy bunches. A few new decorative sorts were charming, as *Alexandra*, salmon and rose colour; *sulphurea*, pale clear yellow, bud firm and petals stiff; *salmones*, salmon rose, and white, very free. The *Tea Rose Coralina*, given an Award of Merit last autumn, was well shown; and a fine selection of *Pillar Roses*, of which *robusta*, with large double, crimson flowers, was very effective; *Waltham Climber*, of habit like *Gloire de Dijon*, with large crimson flowers, looked very pretty. The group was well put up, and it represented the more decorative section of Roses (Silver-gilt Banksian Medal).

Messrs. PAUL & SON, Cheshunt, had a beautiful decorative Rose, named *Lady Battersea*, of attractive form, excellent substance, and bright rose colour.

Some single-flowered Roses and bunches of *Pinks* were shown by Mr. LADHAMS, Shirley Nurseries, Southampton.

Mr. C. TURNER, Royal Nurseries, Slough, showed some beautiful varieties of the *Damask Rose*, *Crimson Damask*, and *Lady Roberts* (white), and *Lady White* (pink).

Tuberous-rooted *Begonias* made a very bright and showy exhibit from Messrs. H. CANNELL & SONS, Swanley, Kent. There were single and double-flowered varieties of great merit; some of the prettiest doubles were *Rosebud*, pink; *Colonel Plummer*, scarlet; *Vivid*, scarlet; *Lady Meath*, white; *Lady Horatio Erskine*, a beautifully tinted variety; *Lady Dundonald*, orange-yellow; *Lady Aline Beaumont*, pink; *Khaki*; *Lord Stradbroke*, crimson; and *Lady Chermide*, salmon-pink, with white centre, and very charming. Single ones included *Captain Lambton*, scarlet, with yellow centre, very large; *Chievely*, crimson, &c. (Silver Banksian Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, Chelsea, exhibited plants of the seedling *Rose Electra*, from *R. multiflora simplex* and a *Noisette* variety; also sprays of *Escallonia Philippiana*, described and figured in *Gardeners' Chronicle*, July 12 and 27, 1898; *Cytisus Schipkaensis*, *Andromeda speciosa cassiniifolia*; *Clematis erecta*, a herbaceous species, with numerous white or cream-coloured flowers; *Deutzia californica*, *Rosa Wichuriana variegata*, with foliage variegated with white; *Polygonum chinense*, a climbing species, with some purple leaves and others green, with vivid red veins something like *P. convolvulus*; also *Magnolia macrophylla* (see Awards).

A pretty pink-flowered *Sweet William*, named *Pink Beauty*, was shown by Messrs. SUTTON & SONS, Reading.

Trachelium coeruleum was shown in a group of well-grown plants by Messrs. W. & J. BROWN, nurserymen, of Stamford and Peterborough.

A fine mauve-coloured *Ten-week Stock*, named *Mauve Beauty*, was shown by Mr. R. DEAN, Ranelagh Road, Ealing. *Heliotropes* in seedling varieties were shown by Mr. HUDSON (see Awards), and Messrs. W. & J. BROWN, Stamford, who had a variety of some merit, named *Lord Roberts*.

Carnation Lord Roberts, exhibited by Messrs. GEO. BOYES & CO., Aylestone Park Nurseries, Leicester, is a very fine yellow-flowered border variety.

Pinks, in several varieties, were shown by Messrs. YOUNG & SON, Windmill Lane, Cheshunt.

Sweet Peas were grandly shown by PERCY WATERER, Esq., Fawkham, Kent (Bronze Flora Medal), who had about a dozen varieties; and by Messrs. JAS. VEITCH & SONS, who had a larger collection of very choice varieties.

Retarded *Lilies* of the Valley were shown in strong bloom by Messrs. LAXTON BROS., Bedford, the variety being "Fortin's."

A collection of *Lilies* was shown by C. B. POWELL, Tunbridge Wells.

ROSES IN COMPETITION.

In the case of the 1st and 2nd prize collections in the class for twenty-four single bunches, the names, not too distinctly written on small cards, were hidden by the leaves and spreading petals of the flowers, or buried in the moss. Rosarians who know the flowers do not trouble to read the names; but the man in the street, who is quite capable of appreciating a good Rose, wants to know the name of it, that he may commit it to paper. We entirely agree with him that the present system of naming generally followed is about as bad as it can be.

With twenty-four single trusses, Messrs. D. PRIOR & SON, Colchester, were 1st with finely developed blooms of *Helen Keller*, *Captain Hayward*, Mrs. J. Laing, *Ulrich Brunner*, *François Michelin*, A. K. Williams, *Caroline Kuster*, *White Lady*, Mrs. R. G. Sharman Crawford, *Gustave Piganneau*, *Marie Baumann*, Mrs. W. J. Grant, *Ernest Metz*, *Fisher Holmes*, *Kaiserin Augusta Victoria*, and others; a generally well balanced box of blooms. The veteran, Mr. B. R. CANT, of the same town, was 2nd, with some very fine blooms, chief among them *Ulrich Brunner*, *Caroline Testout*, *Marie Rady*, *La France*, *White Lady*, Mrs. J. Laing, *Marquise Litta*, *Alfred Colomb*, A. K. Williams, *Duke of Wellington*, Mrs. W. J. Grant, &c.

With eighteen distinct trusses, amateurs, Mr. C. J. SALTER, the Gardens, Woodhatch, Reigate, was 1st, staging blooms characterised by high development, such as *Marquise Litta*, *Marie Baumann*, *Etienne Levet*, *Caroline Testout*, Mrs. J.

Laing, *Ulrich Brunner*, *Madame Gabrielle Luizet*, *Susanne M. Rodocanachi*, *Xavier Olibe*, *François Michelin*, *Captain Hayward*, *Duchesse de Morny*, *General Jacqueminot*, *Dupuy Jamin*, and others; 2nd, the Rev. J. H. PEMBERTON, *Haverling-atte-Bower*, whose leading blooms were Mrs. R. G. Sharman Crawford, *Caroline Testout*, *Ulrich Brunner*, *Comtesse de Ludre*, *Auguste Rigotard*, *Charles Lefebvre*, *Captain Hayward*, &c. There were several exhibitors in this class.

The 1st prize for eighteen single trusses, open, was won by Mr. CHARLES TURNER, Royal Nursery, Slough, but in massiveness and finish the blooms fell behind those shown by amateurs. The leading blooms in this stand were *François Michelin*, *Her Majesty*, *Ulrich Brunner*, Mrs. J. Laing, *Caroline Testout*, A. K. Williams, Mrs. R. G. Sharman Crawford, *Duke of Wellington*, *Ellen Drew*, *Horace Vernet*, &c. Messrs. GEO. COOLING & SON, Bath, were 2nd; their most attractive flowers were the Rev. Alan Cheales, *Marchioness of Downshire*, *Bladud*, *Ulrich Brunner*, *Captain Hayward*, *Kaiserin Aug. Victoria*, *Marquise de Litta*, *Madame C. Wood*, Mrs. R. G. Sharman Crawford, &c.

The class for twelve single trusses shown by amateurs brought a brisk competition, and Mr. G. W. COOK, The Briars, Torrington Park, Finchley, was awarded the 1st prize, his leading blooms were Mrs. J. Laing, *Duchess of Bedford*, Mrs. R. G. Sharman Crawford, *Marquise de Litta*, *Gustave Piganneau*, *La France*, *Captain Hayward*, Mrs. W. J. Grant, and *Caroline Testout*. The Rev. A. FOSTER MELLIER, *Sproston Rectory*, Ipswich, was 2nd; the most noticeable of his blooms were *White Lady*, Mrs. Paul (Bourbon), *Gustave Piganneau*, *Helen Keller*, Mrs. W. J. Grant, *La France*, Mrs. J. Laing, and *Bessie Brown*. And an equal 2nd prize was awarded to H. P. LONDON, Esq., *Shenfield*, *Brentwood*, who had good blooms of Mrs. J. Laing, *Margaret Dickson*, Mrs. R. G. Sharman Crawford, *Comtesse de Ludre*, *Medea*, *White Maman Cochet*, and *Françoise Kruger*.

There were nine exhibitors of six single trusses (amateurs), and Miss B. H. LANGTON took the 1st prize with Mrs. W. J. Grant, *Catherine Guillemot*, A. K. Williams, *La France*, *Captain Hayward*, *Marquise Litta*, &c. Mr. R. COOK, *Stonebridge Park*, Acton, was placed 2nd; his best blooms were *Caroline Testout*, *Victor Hugo* (brilliant in colour), Mrs. J. Laing, *Ulrich Brunner*, Mrs. R. G. Sharman Crawford, *Captain Hayward*, &c.

The next class for six single trusses of any one variety of hybrid perpetual, hybrid Tea, or hybrid Bourbon, Mr. C. J. SALTER was 1st, with very fine Mrs. J. Laing; Mr. R. G. C. BURNARD, *Hill Grange*, Reigate, was 2nd, with Mrs. R. G. Sharman Crawford.

Reference has been made to the Tea and *Noisette* Roses. The best eighteen single trusses, in not fewer than twelve varieties, came from Mr. O. G. ORFEN, West Bergholt, Colchester, who had *The Bride*, *Anna Olivier*, *Amazona*, *Madame Hoste*, *Innocenta Pirola*, *Catherine Mermet*, *Souvenir d'Elise Vardon*, *Medea*, *Comtesse de Nadaillac*, *Souvenir de S. A. Prince*, *Edith Gifford*, and *Rubens*. The Rev. A. F. MELLIER was 2nd; he had *Souvenir d'Elise Vardon*, *Maréchal Niel*, *Golden Gate*, *Comtesse de Nadaillac*, *Catherine Mermet*, *Bridesmaid*, *Madame Cusin*, *The Bride*, *Sylph*, and *Cleopatra*. We heard several opinions expressed that this collection was superior to the one awarded the 1st prize.

With eighteen single trusses, open, Mr. GEORGE PRINCE, Oxford, was 1st, having fine blooms of *Comtesse de Nadaillac*, *Muriel Grahame*, *Maréchal Niel*, *Maman Cochet*, *Souvenir d'un Ami*, *Golden Gate*, *Madame de Watteville*, *Medea*, *Souvenir de S. A. Prince*, *Princess of Wales*, *Lucile*, *Innocenta Pirola*, *Catherine Mermet*, *Amazona*, &c. 2nd, Messrs. D. PRIOR & SON, whose leading varieties were *Maman Cochet*, *Golden Gate*, *Catherine Mermet*, *Souvenir d'Elise*, *Ernest Metz*, *Niphotos*, *Marie Van Houtte*, *Innocenta Pirola*, *Maréchal Niel*, *Alba rosea*, *Comtesse de Nadaillac*, *Caroline Kuster*, &c.

The next class was for amateurs, showing twelve single trusses, in not fewer than nine varieties; here Mr. E. M. BETHUNE was placed 1st, with *Innocenta Pirola*, *Madame Cusin*, *Golden Gate*, *Maman Cochet*, *Françoise Kruger*, *Marie Van Houtte*, *Catherine Mermet*, *Edith Gifford*, *Souvenir de Thérèse Levat*, a striking colour among the pale Tea scented, &c.; 2nd, Mr. W. MEASE, gr., to Mr. A. TATE, *Downside*, *Leatherhead*, whose best blooms were *Madame Hoste*, *Marie Van Houtte*, *Madame Cusin*, *Maman Cochet*, *Comtesse de Nadaillac*, *Sylph*, *Cleopatra*, and *Golden Gate*.

In the amateur class for six single trusses in not less than four varieties, Mr. G. A. HAMMOND, *Cambrian House*, *Burgess Hill*, was placed 1st, having *Maman Cochet* (3), *Catherine Mermet*, *The Bride*, and *Madame Hoste*. Mr. H. P. LONDON was 2nd, he had *Cleopatra*, *Maman Cochet*, *The Bride*, and *Catherine Mermet*.

With nine single trusses of any one variety, Mr. O. G. ORFEN was 1st, with *Souvenir de S. A. Prince*; Mr. F. W. CAMPION, *Trumpets Hill Farm*, Reigate, was 2nd, with *Souvenir d'un Ami*. Mr. E. M. BETHUNE was 1st with six trusses of any one variety, having *Comtesse de Nadaillac*; *Madame Cusin* was 2nd from an exhibitor whose name was overlooked.

GARDEN OR DECORATIVE VARIETIES.

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, won in the large class for thirty-six distinct varieties. This was a grand lot, and among them were conspicuous such varieties as the single pink-flowered *Dawn*, *Rugosa* varieties, *Idéale*, *H. T. Gustave Regis*, *H. T. Marquise de Salisbury*, *The Garland*, *H. T. Camoens*, &c.; Messrs. GEO. COOLING & SONS were 2nd, and Messrs. F. CANT & CO. 3rd.

For eighteen distinct varieties, in a class limited to amateurs, ALFRED TATE, Esq., *Downside*, *Leatherhead*, was the best exhibitor. Larger flowered varieties largely pre-

dominated, but Mosses and Polyanthas were represented. 2nd, the Rev. J. H. PEMBERTON.

Class Sixteen was for nine distinct varieties shown in vases. Here, Mr. B. R. CANT won, all of the flowers were very fine indeed, General Jacquemont, Capt. Hayward, Ulrich Brunner, Mrs. Sherman Crawford, and Mrs. Paul especially. 2nd, Messrs. PAUL & SON, Old Nurseries, Cheshunt; and 3rd, Messrs. FRANK CANT & CO.

For six varieties to be staged, also in vases (Amateurs), O. G. ORPEN, Esq., Hillside, West Bergholt, Colchester, was the best exhibitor. The varieties were Captain Hayward, Margaret Dickson, La France, Marquise Litta, Mrs. W. J. Grant, and K. A. Victoria; 2nd, the Rev. J. H. PEMBERTON; and 3rd, C. ARTHUR PEARSON, Esq., Farnham Place, Farnham (gr., Mr. W. J. Prewett).

The best collection of six distinct varieties was from Mr. B. R. CANT, Colchester. The varieties were Cleopatra, Madame Hoste, Bridesmaid, Souvenir de S. A. Prince, Madame de Watteville, and Marie Van Houtte; Mr. GEO. PRINCE, Oxford, was 2nd; Messrs. F. CANT & Co. 3rd.

Awards.

Delphinium Blanche Fitzmaurice.—A double variety, mauve coloured, and bright blue, with white centre. From Messrs. KELWAY & SON (Award of Merit).

Heliotrope Picciola.—A very fine purple-flowered Heliotrope, the flower-head as shown being 7 inches or more across. From Mr. J. HUDSON, Gunnersbury House Gardens, Acton (Award of Merit).

Magnolia macrophylla.—A very large-leaved species, introduced from N. America a century ago this year. The leaves are sometimes 3 feet long, and the flowers as shown were 15 inches across; petals cream-coloured, nearly white, with purple stains at base, fragrant; figured in *Botanical Magazine* t. 2189. From Messrs. JAS. VEITCH & SONS (First-class Certificate).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), J. G. Fowler, De B. Crawshaw, J. Colman, W. Cobb, H. Little, H. T. Pitt, H. J. Chapman, W. H. Young, J. Jaques, E. Hill, H. A. Tracy, and C. Winn.

MESSRS. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, staged the only large group of plants, which was a remarkable one, the plants representing both hybrids and species at their best. The hybrids comprised the new *Laelio-Cattleya* × *Nephelia* (L.-C. × *Amesiana* × C. Mossiae ♀), with pretty flowers, equal to a medium-sized C. Mossiae in size and form, the sepals and petals bluish-white, the lip chrome-yellow in the centre, with maroon lines merging into the light rose, and a crimped front lobe; three plants of L.-C. × *Canhamiana*, two of them being of the pure white-petalled variety alba; a good L.-C. × *eximia*, L.-C. × *Aphrodite*; *Cattleya* × *Niobe* (Mendeli & Acklandiae ♀), a singular and showy flower; the brilliant scarlet *Epiphrontis* × *Veitchi*, *Phaius* × *Owenianus* (Humboldt × bicolor), the rich rosy-crimson *Disa* × *Veitchi*, D. × *Diores*, and D. × *Kewensis*, two good examples of the pretty *Spathoglottis* × *aureo-veillardii*, and a number of showy hybrid *Cypripediums*, &c. Among the species were a splendid plant of *Laelia Digbyana*, with fine large flowers; a good L. purpurata, *Cattleya Warszewiczii*, C. Mossiae, C. Mendell, *Cypripedium superbiens*, with fifteen flowers; C. *Mastersianum*, with five flowers; and others equally fine and well flowered; *Lycaste aromatica*, with a great quantity of its fragrant blossoms; fine plants of *Epidendrum vitellinum majus*, *Odontoglossum*, *Anguloas*, *Dendrobium velutinum*, and other showy species. A Silver-gilt Flora Medal was awarded.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), showed the beautiful *Laelio-Cattleya* × *Wiganie* (see Awards), which was so much admired in his fine display at the Richmond Show; L.-C. × *Wiganie aurea*, with sepals and petals of a shade of buff, the petals being the lighter in tint, and having a lavender tinge. The showy lip is at the base of a creamy-white, with purple veining running into the light rosy-lilac, frilled front lobe. Sir F. WIGAN also showed the handsome *Sobralia* × *Wiganie* of a delicate primrose tint with light rose shade, the front of the lip being light rose; and the fine *Laelio-Cattleya* × *Henry Greenwood superba*.

JEREMIAH COLMAN, Esq., Gattin Park, Reigate (gr., Mr. W. P. Bound), showed *Odontoglossum crispum* "Gattin Park variety," a large and broad-petalled form, white, with a purple tinge, and with one brown blotch on the lip in front of the yellow crest, all the segments being more or less fringed.

J. WILSON POTTER, Esq., Elmwood, Park Hill Road, Croydon, showed *Odontoglossum crispum* "Lady Jane," another singular variation in the direction of O. c. Oakfield Sunrise. The sepals were white, the petals bore a number of brown spots, and the yellow lip showed small brown-coloured spots inside the margin.

J. GURNEY FOWLER, Esq., Gblelands, South Woodford (gr., Mr. Davis), sent *Cypripedium* × *Curtisio praestans* (Curtisii × *praestans*), a singular variety, with the upper sepal greenish with purple lines; the petals greenish-white with dotted lines of purple, and a whitish lip, having a tinge of dull rose.

Dr. F. FRITCHARD DAVIS, County Asylum, Maidstone, sent *Cattleya granulosa* *Buyssonianae*, a pretty form, in which the sepals and petals are clear yellow and unspotted.

Messrs. HUGH LOW & CO., Bush Hill Park, sent *Cattleya Mossiae* *Reineckiana*, a better form of it, named C. M. Duke of Teel; also C. M. *Disiplino*, with lavender-veined petals, and a rich purplish-crimson lip with white margin.

DE B. CRAWSHAW, Esq., Rosefield, Sevenoaks (gr., Mr. S. Cooke), showed *Cattleya Mendeli* *rosefieldensis*, a pretty

form in which the petals are tipped with bright mauve; and *Laelia tenebrosa* *rosefieldensis*, a very large flower of nice colour.

A. J. HOLLINGTON, Esq., Forty Hill, Enfield (gr., Mr. Ayling), showed *Cypripedium* × *General French*, said to be the result of crossing C. × *Swaniam* and C. *bellatulum*, which is the record of C. × *William Lloyd*. The present flower was white marked with rose-purple.

Mr. A. J. KEELING, Cottingley, Bingley, Yorks, showed a fine variety of the old *Dendrobium moschatum*, in which the purple markings at the base of the lip were obscure.

Messrs. PAUL & SON, Cheshunt, showed fine spikes of the supposed natural hybrid *Orchis* × *foliosa-maculata*, and bunches of the species from which it resulted; the rosy-like flowers of the hybrid being intermediate, resembling the O. *foliosa* of Madeira, but having spotted leaves like the British form.

Mr. T. R. CUCKNEY, Cobham Hall, Gravesend, showed a quantity of spikes of *Ophrys apifera*.

A. H. SMEE, Esq., The Grange, Hackbridge (gr., Mr. Humphreys), showed *Eulophia euglossa*, a Sierra Leone species with erect spikes of green flowers, the front of the lip white, the disc purple.

Awards.

First-class Certificates were given to *Laelio-Cattleya* × *Wiganie* (L.-C. × *Gottiana* × C. Mossiae), from Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young). A very handsome and remarkable hybrid, remarkable for rich and delicate colouring. The flowers in size and form are equal to those of *Cattleya Mossiae*; the sepals and petals having a delicate tint of light yellowish rose; and the crimped lip shows maroon purple lines, starting from the base, and extending into the purplish rose-tinted front lobe.

Laelio-Cattleya × *Henry Greenwood superba* (L.-C. × *Schilleriana* × C. × *Hardyana*), from Sir FREDERICK WIGAN, Bart., a fine improvement on the original form, which was illustrated in the *Gardeners' Chronicle*, November 26, 1898, p. 383. Flowers large, sepals and petals pale rose; centre of lip primrose-yellow, the broad front lobe ruby-purple.

BOTANICAL CERTIFICATES.

Broughtonia sanguinea, from J. T. BENNETT-POB, Esq., Holmwood, Cheshunt (gr., Mr. Downes). A rare old West Indian species, reputed to be difficult to cultivate, but as shown it was a healthy plant carrying two flower-spikes.

Colax viridis, from Messrs. JAS. VEITCH & SONS. Flowers wax-like, emerald-green, with violet markings on the lip.

Fruit and Vegetable Committee.

Present: H. Balderson, Esq., Chairman; and Messrs. H. Esling, Jas. H. Veitch, W. Wilks, E. Shaw-Blaker, M. Gleeson, Geo. Kelf, Alex. Dean, S. Mortimer, W. Bates, Thos. Coomber, E. Beckett, Geo. Wythes, F. Q. Lane, Jas. Smith, G. Reynolds, W. J. Empson, W. H. Divers, J. Willard, and Jos. Cheal.

MESSRS. JAS. VEITCH & SONS exhibited a fine lot of fruits of *Strawberry Veitch's Prolific*, but the fruits, like most *Strawberries* in such weather as we have had lately, were rather soft and watery. The variety has been Awarded a Certificate by the Royal Horticultural Society.

From C. BAYER, Esq., Tewkesbury Lodge, Forest Hill, London, S.E. (gr., Mr. W. Taylor), were shown four dishes of Peaches, and three dishes of Nectarines. The Peaches were Dr. Hogg, Crimson Gaiety, Dagmar, and Early Albert; and the Nectarines, Dryden, Lord Napier, and Advance. The fruits were not large, but worthy of commendation as being grown so near the centre of London (Silver Banksian Medal).

A grand collection of Queen Pine-apples was shown by Lord Llangattock, The Hendre, Monmouth (gr., Mr. T. Coomber). There were rather more than a dozen fruits shown, of good medium size, and they were in excellent condition. There are few gardens in this country where, at the present time, it would be possible to see a similar collection (Silver-gilt Knightian Medal).

MESSRS. LAXTON BROS., Bedford, exhibited *Strawberry Laxton's Maincrop*. It is from a cross between the varieties McMahon and Sir J. Paxton. Also their *Strawberry Fillbasket*, exhibited on previous occasions.

Cherry Bigarreau de Schrecken, from Mr. J. HUDSON, Gunnersbury House Gardens, Acton, W., was grand. The fruits had been gathered from an open wall, and forty-two of the fruits were said to weigh a pound.

Mr. G. Reynolds, gr. to the Messrs. DE ROTHSCHILD, Gunnersbury Park, Acton, W., exhibited twelve dishes of excellent Cherries from the orchard-house; also good fruits of British Queen *Strawberry* (Silver Knightian Medal).

A quantity of Peaches was shown by Mr. Kelf, gr. to Miss ADAMSON, Regent's Park, only 2 miles from Charing Cross, and these were awarded a Silver Knightian Medal.

Messrs. T. RIVERS & SON, Sawbridgeworth, exhibited excellent Peaches, Nectarines, and Plums; of Peaches there were Royal George (two dozen fruits), Dr. Hogg (one dozen fruits), Dymond, and Thomas Rivers. The Nectarines shown were the variety Victoria. Also Early Rivers' Cherries grown as pot trees twenty-five years old in cool orchard-house; and Czar Plum from three years' old orchard-house trees (Silver Banksian Medal).

Messrs. BARR & SONS, King Street, Covent Garden London, W.C., showed a collection of fifteen varieties of Peas, most of them popular ones. Also Barr's Early Best-of-All, Cauliflower.

Awards.

Milton, Free Chase Scarlet.—A seedling from a cross between Lockinge Hero and Sutton's Improved green. The fruit is

large, yellow, and closely netted, flesh deep, scarlet; flavour good. From Sir GEO. ALLEN, Haywards Heath (Award of Merit).

Nectarine, Lockerley Hall.—Of moderate size, and deeply coloured; flavour good. From Mr. J. BUDD, Romsey (Award of Merit).

Pea, Edwin Beckett.—This is a splendid new Marrowfat Pea that comes into condition at a very early date. The variety has been grown at Chiswick and an Award of Merit was given it there last week as described on p. 16, col. 3. The pods as shown at the Drill Hall, were about 5½ inches long. From Mr. E. Beckett, gr. to Lord ALDENHAM, Aldenham House, Elstree (First-class Certificate).

Lecture on Roses.

In the afternoon Mr. GEO. PAUL, V.M.H., gave a paper upon Roses, and spoke chiefly of varieties of Roses most suitable for bedding, or for the making of hedges, or furnishing of pillars. If anyone is capable of offering advice upon this subject it is surely Mr. Paul, and his listeners therefore heard competent opinion upon the merits of many varieties for use in such purposes, and upon the best methods of planting and pruning. The paper will have much value for Rose-growers present and prospective when it is published in the *Royal Horticultural Society's Journal*.

THE PARIS EXHIBITION.

At the Horticultural Congress held on June 27, the French house was well filled, and some of the groups of open-air plants were even placed on the terrace between the two houses. Most of the exhibits were such plants of the season as have been previously mentioned. The vegetables and fruit were fine and abundant. MM. CROUX ET FILS, of Chateaufort, and DESIRÉ BRUNEAU, of Bourg-la-Reine, showed fine collections of plants and of pot fruit-trees. The fruits sent by MM. PARENT of Rueil, MILLET of Bourg-la-Reine, FATZER, LECOINTE, WHIR, and other exhibitors were worth notice. I would further mention the beautiful Roses from M. LÉON DUBOIS of Rouen, from the Société d'Horticulture de l'Arbe, from M. BOUTIGNY of Rouen, and from MM. DEFRESNE, LEVEQUE, ROTHEBERG, BOUCHER, and others. The Carnations from M. BERANEK, M. REGNIER, and M. DE DIGNÈRES. The Hydrangeas from M. FAILLER, and a fine group of Delphiniums, also from M. FAILLER, were very beautiful; as were also the tuberous Begonias from MM. VALERAND, the Anthurium Andreanum, with very large spathes, sent by M. ROBERT LEBAUDY of Bougival; the Zinnias, of vivid colouring, from M. GERAUD; the Carnations, Pelargoniums, and Petunias, from M. NONIN; the flowering shrubs, from M. DESIRÉ BRUNEAU; a group of Campanula Medium, from M. NOEFF, nurseryman, of Moscow; and the fine Cannas, from MM. BAILLIARD & BARRÉ. Equally noticeable were the two fine trusses of forced Lilac, from M. FRICKE METZER of Vitry-sur-Seine; the Carnations and Orchids of M. MAGNE of Boulogne; Pelargonium grandiflorum, from M. BOUTREUX (not zonal, as was previously stated); and the Orchids, from MM. REGNIER, BERANEK, and DALLÉ.

M. MARON sent a fine group of Orchids, including *Cattleya Gaskelliana* alba; C. Mossiae alba, and some good hybrids, among them several *Laelio-Cattleya* × *Martineti*; L. Lady Wigan; also L. purpurata-Mossiae × L. callistoglossa, very like the latter; L. × *Henry Greenwood* var. Duc de Marsa, a fine flower, with a large very dark blood red spot on the anterior lobe of the lip. MM. VILMORIN ANDRIEUX ET CIE. staged a fine lot of alpine, many annuals and biennials, and the handsome Iris Kiepmferi. I would also mention the large collection of bulbous plants shown by M. E. THIERAUT and M. THIEBAUT-LENDRE of Paris. G. T. Grignan.

LINNEAN.

JUNE 21.—Dr. A. GÜNTHER, F.R.S., Vice-President, in the Chair.

The CHAIRMAN announced with deep regret the loss which the Society had sustained by the sudden death at Florence, on June 11, of Mr. Walter Percy Sladen, a former Vice-President of the Society, and Zoological Secretary from 1885 to 1895. Mr. B. DAYDON JACKSON, for ten years his colleague, bore testimony to Mr. Sladen's untiring devotion to the interests of the Society, to his willing co-operation in all that concerned its welfare, and to his amiability of disposition which had endeared him to all.

Prof. M. HARTOG, F.L.S., exhibited and made remarks on flowers of new *Abutilon* seedlings, recently raised by him, and pointed out the extreme variability shown in the form of many of the leaves.

Dr. O. STAFFE, A.L.S., exhibited fruits of various forms of *Trapa* from Europe, China, and India, and discussed the differentiation of the genus into species. He was inclined to recognise five species which inhabit fairly well-defined geographical areas; but as the discrimination of these depends chiefly on the armature and sculpture of the mature fruit (the flowers being in some cases unknown, and in others very poorly represented in herbaria), he found it at present impossible to define the species satisfactorily. Unpublished drawings of Indian and Chinese species in the collections at Kew rendered it probable that certain differences in the fruits would be found to be correlated with differences in the structure of the flowers.

Mr. CLEMENT REID, F.R.S., F.L.S., exhibited a series of Plum-stones recently found in a drain of the Roman baths, and in a rubbish-pit, at Silchester. The species identified

were Cherry (*Prunus avium*), Damson (*P. domestica*), Bullace (*P. insititia*), Sloe (*P. spinosa*), and Portuguese Laurel (*P. Laurecerasus*). Besides these, there was a large variety of Plum, and a very small Sloe, the species of which had not as yet been precisely determined.

On behalf of Dr. O. St. Brody, Mr. B. Payton Jackson exhibited a small series of British Orchids dried by a new process, by which the flexibility of the plant and the natural colours were in a great measure retained.

Mr. R. MORRIS MIDDLETON, F.L.S., exhibited several rush-baskets, plaited ropes, and dredgers made from *Rostkovia grandiflora*, Hook. f.; and a crab-catcher and limpet detacher made from *Berberis illefolia*, Forster, all used by the Yahgans south of Beagle Channel, Tierra del Fuego.

A discussion followed, in which the zoological and botanical aspects of the exhibits were commented on by Dr. Günther, Mr. J. E. Harting, and Dr. Rendle.

Dr. A. B. RENDLE, F.L.S., referring to his recently published "Revision of the genus *Najas*," (*Trans. Linn. Soc.*, 2nd ser., Bot., vol. v., part 12), read a supplementary paper on the same subject, in which he gave additional information gained from a recent examination of specimens in eleven continental herbaria, particularly those at Paris, Geneva, Vienna, and Berlin. Some new forms were described (notably a new species from Senegal), and some fresh notes were added on the geographical distribution of several imperfectly-known species. Since the publication of the paper referred to, the author has had the advantage of examining a number of specimens which had been collected in South-eastern Russia and the Malay Archipelago, and were forwarded from the museum at St. Petersburg.

The next session of the Society will commence on Thursday, November 1 next, at 8 P.M., particulars of which will be duly announced.

SOUTHAMPTON HORTICULTURAL.

JUNE 27 and 28. A successful exhibition was held on the above dates on the Royal Pier. The various groups of miscellaneous plants arranged with an idea of producing effects must be characterised as praiseworthy. Mr. E. Carr, gr. to W. A. GILLET, Esq., Fair Oak Lodge, Bishopstoke, was 1st in this class, for an excellent group in which Orchids figured largely. Mr. Peel, gr. to Miss TODD, Shirley, was 2nd.

Specimen plants were not numerous, and the best were shown by Mr. T. Hall, gr. to Sir S. MONTAGUE, Bart., South Stoneham House, who exhibited six diverse species; and the 2nd prize fell to Mr. PEEL. Gloxinias were well shown by Mr. CARR, who was 1st for six grandly grown plants.

Roses were not numerous, but the blooms shown were of quite creditable quality. Mr. G. H. BURCH, nurseryman, Peterborough, was 1st in all of the six classes, i.e., in the classes for thirty-six and for twelve blooms of distinct, in that for twelve triplets, and for twelve blooms of Tea or Noisette varieties, and for six blooms of any one variety, either dark or light coloured. Messrs. D. PRIOR & SONS, nurserymen of Colchester, were 2nd.

Amateurs showed Roses excellently well in all of the classes set apart for them; Dr. SEATON winning for eighteen and twelve varieties with good blooms of their respective varieties. Mr. HALL followed the doctor very closely in some of the classes.

Baskets of Roses made a pretty show, and Miss L. TYRELL, of Dagmar Villa, Southampton, was an easy 1st, with a very charming collection of blossom; Miss WADMORE, Basingstoke, being 2nd.

Messrs. PERKINS & SONS, nurserymen, &c., of Coventry, took the leading prizes for ball and bridal bouquets; and Mr. F. BAILEY, florist, of Southampton, was adjudged 2nd.

In the hardy plant section, Mr. B. LADHAMS, Shirley, near Southampton, was 1st for twelve bunches of hardy flowers, consisting of *Campanula persicifolia* var. *Porcelain* and *Mont Blanc*, *Coeur-de-lion*, *Eldorado*, *Gaillardia*, *Brilliant* and *Delphinium nudicaule*, all of which were in fine condition; and Mr. ISAAC HOUSE, of Bristol, was 2nd.

Fruit and vegetables formed a considerable feature of the exhibition. Mr. BOWERMAN, gr. to Mrs. C. HOARE, Hackwood Park, Basingstoke, securing the chief prizes; being followed by Mr. CHEATOR, gr. to Sir W. PINK, of Cosham.

SALISBURY HORTICULTURAL AND NATIONAL ROSE.

JUNE 27.—The annual show of the National Rose Society held in the provinces, was held this year in the grounds of the Bishop's Palace, an eminently appropriate site. Taking the showery, sunless weather into consideration, and the counter attraction of the show at Richmond, the display should be described as a creditable one. The garden or decorative varieties were finely displayed, and probably they will be seen nowhere else this season in finer condition; the colouring individually being perfect, while the arrangement of the blooms left little to be desired.

The schedule of prizes brought together a thoroughly representative lot of varieties, there being no fewer than twenty-eight classes. Taking the classes in the order of the prize list, thirteen were provided for nurserymen's exhibits. The principal class was one for forty-eight varieties, distinct, £6 being offered as 1st prize. Although there were but three competitors, they made a creditable display. Messrs. A. DICKSON & SONS, nurserymen, Newtownards, Co. Down, were easily 1st, and the blooms that they staged, if not large of size, were well coloured and tastefully set up. Among the varieties were *The Bride*, *Tom Wood*, *Margaret Dickson*, *Ernest Metz*, *Decaisne's White*, *M. Niel*, *La France*, *Mrs. W. J.*

Grant, *Bessie Brown*, *Marchioness of Dufferin*, *Comtesse de Paris*, *Florence Pemberton*, *Ulster*, *Rubens*, *Duchess of Tees*, *Marchioness of Downshire*, *Dupuy Jamain*, *Hon. E. Giddard*, *A. K. Williams*, *Souvenir d'un Ami*, *Gustave Pignanneau*, *Lady Mary Fitzwilliam*, *Helen Keller*, *Alice Lindsell*, *Abel Carriere*, *Catherine Mermet*, *Duke of Edinburgh*, *Marchioness of Londonderry*, *Mrs. Conway Jones*, *Souvenir du President Carnot*, *Glady's Harkness*, *M. Niel*, *Muriel Grahame*, *Lady Clanmorris*, *Sheila*, *Souvenir de S. A. Prince*, *Mrs. Mawley*, *Madame Hoste*, *Madame Cusin*, *Caroline Testout*, *Marie Verdier*, *Mrs. T. Sharrman Crawford*, *Marquis Litta*, *Mildred Dickson*, *Alphonse Souperet*, *Maman Cochet*, *Mrs. John Laing*, *Medea*, and *Lady Moura Beauderik*, a very fine selection. Messrs. F. CANT & Co., Braiswick Nurseries, Colchester, was 2nd, with smaller, but more richly coloured blossoms.

In the class for twenty-four distinct, there were five competitors, the 1st award falling to Mr. G. PRINCE, of Oxford, for a clean lot of blooms of moderate size. *Comtesse de Nadailac*, *The Bride*, *Mrs. G. W. Grant*, *M. Niel*, *Gustave Pignanneau*, *Souvenir de S. A. Prince*, *Prince Camille de Rohan*, *Medea*, *Catherine Mermet*, *Princess of Wales*, *Auguste Rigotard*, *Souvenir d'Elise Vardon*, *Captain Hayward*, *Rubens*, *Souvenir d'un Ami*, *Cleopatra*, *Exposition de Brie*, *Amazon*, *Lady Mary Fitzwilliam*, *Kaiserin Augusta Victoria*, *La Fraicheur*, *Marie Van Houtte*, *Dupuy Jamain*, and *Innocente Pirola* were among the finer blooms. Messrs. J. BURKETT & Co., Nurserymen, of Cambridge, were a close 2nd.

For twenty-four distinct trebles, Messrs. DICKSON were again 1st, with an even lot of blooms, inclusive of *Gustave Pignanneau*, *Souvenir d'un Ami*, *The Bride*, *Medea*, *Mrs. W. J. Grant*, *Ulster*, and *Alice Lindsell*, were noteworthy. Messrs. FRANK CANT was 2nd.

For twelve blooms of any one variety except Tea or Noisette, Messrs. DICKSON secured the leading place, with beautifully formed blooms of *Ulster*, whose only blemish was in the outer petals, which were a little damaged by rain. Messrs. F. CANT & Co. followed with *Mrs. W. J. Grant*.

TEA OR NOISETTE SECTION.

There were four competitors in the twenty-four class, and Mr. G. PRINCE won with blooms of moderate size, among which the more noticeable were *Princess Beatrice*, *Niphetos*, *Alba Rosea*, *Cornelia Koch*, *Anna Olivier*, *Golden Gate*, *Innocente Pirola*, *La Boule d'Or*, *Madame Cusin*, *Souvenir d'un Ami*, *Rubens*, *Madame Fortado*, *Medea*, *Souvenir d'Elise Vardon*, *Princess of Wales*, *Souvenir de S. A. Prince*, *Maman Cochet*, *Marie Van Houtte*, and *Comtesse de Nadailac*. Mr. F. CANT was 2nd.

For twelve distinct varieties, Mr. J. MATTOCK, Nurseryman, of Oxford, was placed 1st with fresh, clean-looking varieties.

"GARDEN" OR DECORATIVE VARIETIES.

Although but two competed, viz., Messrs. PAUL & SON of Cheshunt, and Messrs. G. COOLING & SONS of Bath, with thirty-six varieties, their stands made a fine feature. Messrs. PAUL & SON won the 1st prize owing to the superiority of their arrangement, and of such excellence was the stand, that we thought it worth while to supply an abridged list of the varieties:—*W. A. Richardson*, *Marquis de Salisbury*, *Blanche de Coubert*, *Camoens*, *Gustave Regis*, *Souvenir de Cochet*, *Madame G. Brunt*, *Morlette*, *Albion simplex*, *Claire Jaquier*, *Blush Gallica*, *Reine Olga de Wurtemberg*, *Una*, *Carmine Pillar*, *Madame P. Ducher*, *Rosa mundi*, *Polyantha grandiflora*, *Allister Stella Grey*, *Domeniel*, *Boccard*, *Amadis*, *Blanche Moreau*, *L'Idéal*, *Papa Gontier*, *Perle des Parachutes*, *Madame Charles*, *Rugosa limbrata*, *Madame Falcot*, *old Red Damask*, *Anne-Marie de Montravail*, *Madame P. Cochet*, *Dawn*, and *Madame C. Guinoisseau*.

Messrs. COOLING staged bunches of *Papa Gontier*, *Purity*, *Marquis de Salisbury*, and *Dr. Rouges*, which were very noteworthy.

For eighteen distinct varieties, Mr. C. TURNER, nurseryman, Slough, gained an easy victory. Particularly noteworthy were the varieties *Crimson Damask*, *Souvenir de C. Guillot*, *Cecil Brunner*, *Madame Charles*, *Reine Olga de Wurtemberg*, *Papa Gontier*, and *Princess Marie*; Mr. G. PRINCE was 2nd.

OPEN CLASSES.

For three trusses, any new Seedling Rose or distinct sport, there were but two exhibitors, viz., Messrs. A. DICKSON and Mr. G. PRINCE. The former showed *Alice Lindsell*, a Tea, a well-built flower of a soft pink colour. To this was awarded the Gold Medal of the Society. Mr. PRINCE staged *Bellefleur*, a semi-double, rich coloured variety, to which was awarded a card of commendation.

In the Tea and Noisette Classes, Messrs. F. CANT won with twelve blooms, distinct, and was closely followed by Messrs. D. PRIOR & SONS.

For twelve bunches of Sweet Briar Roses in nine varieties, Messrs. COOLING secured the leading award with a fair exhibit, *Lucy Bertram*, *Anna of Gierstein*, and *Green Mantle*, being the most noteworthy varieties. Mr. F. CANT was 2nd.

AMATEURS.

For twelve blooms, distinct, The Rev. J. H. PEMBERTON, Havering-atte-Bower, Essex, easily secured the Gold Medal offered with full sized richly-coloured examples of *Ulster*, *Brunner*, *Mrs. W. J. Grant*, *Caroline Testout*, *Captain Hayward*, *The Bride*, *Mrs. S. Crawford*, *Maman Cochet*, *Comtesse de Ludre*, *M. Niel*, *A. K. Williams*, *Comtesse de Nadailac*, and *Duke of Edinburgh*. Mr. A. H. GRAY, Baughieu, Newbridge, Bath, was 2nd.

The Rev. J. H. PEMBERTON again followed up his previous success by winning 1st place for twenty-four distinct varieties with creditable examples. He was also 1st for six trebles.

For the prizes offered to growers of not fewer than 100 plants, Messrs. W. COLE, The Briers, North Finchley, were the most successful. For those who grow not less than 50 plants, Mr. R. W. BOWER, Hanbury College, Huddersfield, won for six distinct blooms; Mr. E. R. SMITH, Medford Lodge, Muswell Hill, was 2nd.

For the "Princess" Memorial Cup, offered for eighteen distinct varieties, *Tea* and *Noisette*, Mr. A. H. GRAY secured the coveted award with the blooms of popular varieties; and the Rev. A. FOSTER MELLER was 2nd.

For six blooms of any one variety, excepting Tea or Noisette, the Rev. J. H. PEMBERTON won with shapely examples of *Caroline Testout*.

The last-named also secured the premier Award for twelve "garden" or decorative varieties, with a capital exhibit. With six bunches, Mr. E. MAWLEY, Rosebank, Berkhamsted, was 1st, with a creditable exhibit.

For twelve distinct *Tea* or *Noisette*, the Rev. J. H. PEMBERTON was easily 1st; while for six blooms Mr. R. W. BOWER was the winner of the 1st prize.

For six of any one variety, Tea or Noisette, *The Bride* won for Mr. A. W. GRAY the foremost place. *Marchal Niel*, belonging to Mr. SMITH, being placed 2nd.

To the Rev. J. H. PEMBERTON was awarded the National Rose Society's Silver Medal for the best H.P. in the show, *Mrs. Sharrman Crawford*. For H.T. the Rev. FOSTER MELLER secured the award for *La France*.

PREMIER BLOOMS.

In the nurserymen's section, *Comtesse de Nadailac* was adjudged the best in Mr. G. PRINCE's stand; *Lady Mary Fitzwilliam*, the best Hybrid Tea shown by Messrs. D. PRIOR & SONS. Messrs. BURKETT & Co. securing a similar award for *Duchess of Bedford* as the exhibitors of the best H.P.

In the amateurs' division, *Maman Cochet*, from Mr. A. HILL GRAY, was adjudged the best Tea or Noisette. Hybrid Tea *La France*, from Rev. FOSTER MELLER, and H.P. *Mrs. R. G. Sharrman Crawford*, from Rev. J. H. PEMBERTON.

GLOUCESTERSHIRE ROSE.

JULY 3.—The twelfth annual exhibition of Roses in connection with the above society was held in the Spa Cricket Field, Gloucester, on the above date. Owing to the backwardness of the season, one or two well known exhibitors, notably Messrs. JEFFERIES & SON, Cirencester, did not compete; but nurserymen were well represented by three of the largest growers in the kingdom. Messrs. ALLEN, PIERCE & SONS, Royal Nurseries, Newtownards, Co. Down, and Ledbury, Gloucestershire, led practically in all the classes in which they exhibited; and their forty-eight varieties would have compared favourably with any stand of Roses that could be exhibited in the country. Their best blooms included *Bessie Brown*, *Alice Lindsell*, *Mrs. Mawley*, *Mildred Grant*, and the *Marchioness of Downshire*. Nineteen of the forty-eight were seedling Roses, sent into commerce by Messrs. DICKSON, eleven of the varieties being winners of the National Society's Gold Medal. These well known exhibitors also showed a new Rose, dedicated to Mrs. Conway Jones, the wife of the popular local amateur Rose-grower, judge at the Crystal Palace and other Rose-shows, and a successful exhibitor. "Mrs. Conway Jones" is a rich rosy-pink, with a very high pointed centre, and elegantly-shaped petals.

For twelve varieties of light-coloured Roses, Messrs. DICKSON won with a splendid box of *Mildred Grant*; and in dark Roses, Mr. FRANK CANT, Colchester, took 1st prize with some perfect specimens of *Victor Hugo*.

Mr. B. R. CANT, Colchester, was again well to the front in the prize list; some of his best blooms being *Caroline Testout*, *Mrs. John Laing*, *Thomas Mills*, and *Mrs. W. J. Grant*. The Colchester Roses well deserved the position they held, and all those who have followed the ever increasing love and interest taken in our national flower, will rejoice to see success still followed these distinguished growers.

Local amateurs held their own, their flowers being well up to the average quality of what may now be justly expected of Gloucester. A Silver Medal for the best hybrid perpetual (*Ulster*), went to Mr. CONWAY JONES, whom one can hardly speak of as being simply a local amateur, when it is remembered that year after year one sees his name well to the front in exhibiting in open competition with the best growers and exhibitors in the country. The piece of plate given by the City High Sheriff to local amateurs, was won by the honorary secretary of the Society, Mr. T. A. WASHBURN, for twelve varieties, as was also the Corporation Prize (local), for twelve varieties.

The Gold Medal given by the Society for twelve varieties, open to Gloucestershire amateurs, was awarded to the Rev. F. J. FERRARD. There was a distinct advance in the number and quality of the Cottagers' exhibits—an encouraging feature surely. The Silver Medal awarded by Mr. W. J. JEFFERIES for these classes, being awarded to J. MIDDLETON, of Melson, for twelve varieties.

HANLEY HORTICULTURAL.

JULY 4 and 5.—The County Borough of Hanley Horticultural Show was held on the above dates in the Public Park. Commenced only a few years ago, on the same lines as the popular exhibitions at Shrewsbury, Wolverhampton, and York, the one at Hanley is bidding fair to become as great a success as most of them. Hanley has the advantage of a position in the very heart of the Staffordshire potteries, one of the most densely populated areas in England. The show this week was a success. There may not have been so many exhibits in the

more important classes as last year, but the quality shown was everywhere beyond reproach. The exhibits in the class for groups of plants was again a feature. Mr. CYPHER, of Cheltenham, was beaten last year by Mr. Blair, gr. to the Duke of SUTHERLAND. This year Mr. CYPHER won with a magnificent group, in which quality of plants and beauty of arrangement were combined. Miss WRIGHT, of Oswestry, the other exhibitor in Class 1, made a most effective display, and her group comprised some grand flowering and foliage plants.

Mr. W. THOMPSON, of Walton Grange gardens, Stone, sent a display of Orchids; and another Orchid exhibit was made by Mr. CYPHER. Begonias in pots were shown by Messrs. JOHN PEED & SON, of West Norwood.

Quite a feature of No. 2 tent was an exhibition of Ferns by Messrs. W. & J. BIRKENHEAD, Sale, Manchester.

The Roses were not very numerous, though their quality was distinctly superior. The table plants were a good feature, and in all departments of the cottager's exhibition there was a distinct advance. The children's tent contains decidedly the best display ever seen at Hanley.

The Secretary is Mr. J. KENT, superintendent of Hanley Park.

The Mayor of Hanley presided at a luncheon in one of the tents, and speeches were made by several gardeners who had acted in the capacity of judges, including Mr. BURNS of Leicester, Mr. BARDNEY, Osmaston Manor, and Mr. P. WEATHERS, Manchester. The following are some of the chief prizes:—

PLANTS (Open).

Group of Plants Arranged for Effect.—1st, J. CYPHER, Cheltenham; 2nd, W. VAUSE, Leamington Spa.

Group of Orchids in Bloom, Arranged for Effect.—1st, W. THOMPSON, Stone; 2nd, J. CYPHER, Cheltenham.

Group of Malmaison and other Carnations, in pots, arranged for Effect.—1st, Duke of SUTHERLAND, Trentham; 2nd, Earl of HARRINGTON.

Six plants in flower, distinct; six fine foliage plants, distinct.—1st, J. CYPHER, Cheltenham; 2nd, W. VAUSE, Leamington Spa.

Eight exotic plants, distinct.—1st, W. THOMPSON, Stone; 2nd, J. CYPHER, Cheltenham.

Six Palms, distinct.—1st, J. CYPHER, Cheltenham; 2nd, W. VAUSE, Leamington Spa.

Twelve Caladiums.—1st, R. G. HOWSON; 2nd, J. MADDOCK, Alsager.

ROSES.

The leading prizes in the classes for 48 distinct varieties, 36 distinct varieties (trebles), 24 distinct varieties, 12 distinct varieties, and 12 distinct Teas, three blooms of each, were won by Messrs. DICKSON & SONS, Newtownards.

The best collection of hardy flowers was from Mr. H. DEVERILL, Banbury.

FRUIT AND VEGETABLES.

Collection of nine Dishes of Fruit, to exclude Black and White Grapes.—1st, the Right Hon. Lady BEAUMONT, York; 2nd, Lord BAGOT, Rugeley.

Collection of six dishes, Pines excluded.—1st, Sir J. W. PEASE, Guisborough; 2nd, Earl of HARRINGTON, Derby.

Four Bunches of Grapes.—1st, the Right Hon. Lady BEAUMONT, York; 2nd, T. BOLTON, Oakamoor.

Two Bunches Black Hamburg Grapes.—1st, the Right Hon. Lady BEAUMONT; 2nd, Lord BAGOT, Rugeley.

Two Bunches White Muscat Grapes.—1st, Sir J. W. PEASE, M.P., Guisborough; 2nd, Lord BAGOT, Rugeley.

Six Peaches.—The Duke of SUTHERLAND, Trentham; 2nd, Lord BAGOT, Rugeley.

Six Nectarines.—1st, the Earl of CARNARVON, Burton; 2nd, the Right Hon. Lady BEAUMONT.

For the best collection of vegetables, six distinct kinds, the produce of seeds by Messrs. SUTTON, 1st, Earl of CARNARVON.

For collection of vegetables, six distinct kinds, to two of Messrs. WEBB'S varieties, 1st, Earl of CARNARVON.

Collection (nine dishes) of vegetables.—1st, Earl of CARNARVON; 2nd, Right Hon. Lady BEAUMONT.

SPECIAL PRIZES.

Silver Medals were won by the following for trade exhibits:—Messrs. DIXON & SONS, Chester; Messrs. WEBB & SONS, Wordsley; R. SYDENHAM, Birmingham; EDWARDS & SONS, Nottingham; HINTON & SONS, PATTISON & SONS, F. FOULKES, HEWITT, Birmingham; SYDENHAM, Tamworth; Mrs. HODGKINS, FORBES, PEED & SONS, and W. J. BIRKENHEAD. Messrs. WHITE and J. HILL & SONS were awarded Gold Medals.

ANSWERS TO CORRESPONDENTS.

ASH LEAVES: *Sir C. S.*—Your Ash leaves are affected by a dipterous larva—a species of *Cecidomyia*.

ASTERS DAMPING OFF: *T.* The Asters are attacked by a fungus which enters them below or near the surface of the soil, and passes upwards, causing discoloration and softening of the plants. It is a form of damping off, though the fungus which causes it is not the one which brings about most cases of this trouble. Use the same precautions as for all damping-off, namely as much ventilation as possible, and careful watering.

If the soil were top-dressed with some fungicide like "Veltha," or sprinkled with finely-powdered iron, sulphate mixed with a large quantity of ashes and some quicklime, the early stages of the fungus would be checked. There is a useful article on treatment of Asters to prevent damping, in *Gardeners' Chronicle*, June 11, 1893, which you would do well to consult.

BEDDING-OUT: *J. B.* We should plant in the central bed of the middle group for summer display an *Aralia papyrifera*, 3 feet in height, and surround it with mixed tuberous-rooted Begonias, with an edging of *Dactylis glomerata*. In the two other groups, the central bed might be furnished with a specimen Fuchsia, or dwarf Cannas, three or four together; or *Ricinus Gibsoni*, or a small group of *Plumbago capensis*, or varieties of *Grevillea*, with zonal *Pelargoniums* or Begonias planted around, and some dwarf edging-plant to finish off with. If you wish to have masses of colour in the other beds, the best varieties of *Petunias*, zonal and variegated-leaved *Pelargoniums*, *Calceolarias*, dwarf *Ageratum*, *Lobelias* (blue); *Verbenas*, true to name, and the like, should be employed. Very pretty beds are formed by using some of these plants, set out rather widely, so as to permit of all-round development, and employ "dot"-plants of Fuchsia, *Gladiolus*, the best kinds of tall-growing French and German Asters, *Tagetes Guinea Gold*, *Calendula Meteor*, and others; French Marigolds, dwarf, double, and single-flowered Dahlias; green-leaved *Dracenas*, *Celosia pyramidalis*, &c. We would recommend for the spring bedding a free use of Pansies and Violas, Wallflowers, *Allysum saxatile*, *Phlox divaricata* (lilac), and others of dwarf, compact habit of growth; *Primrose Polyanthus* in mixed colours, *Myosotis dissitiflora*, *Arabis*, *Iberis sempervirens*, with *Honesty*. Hyacinths, *Narcissus*, Tulips, planted about amongst these, to give variety, and relieve the otherwise too great flatness of the beds. *Aubrietias* are not exactly suitable plants for flat beds; they look better on rockwork, and are not unsuitable for edgings, provided the plants are set out on a low rocky ridge. Daisies are very prim-looking plants, looking better as edgings to beds filled with other plants than when employed as filling for beds. It might be desirable to break away from these stereotyped methods, and plant the beds with hardy herbaceous perennials of suitable sizes, employing annuals hardy and tender, and biennials such as Wallflowers, Canterbury Bells, Evening Primroses, *Honesty*, &c., amongst them, so as to obtain a fair display for eight months in the year, and at the least expenditure of labour and money.

BOOKS: *G. Mills*. *Horticultural Buildings*, by F. A. Fawkes; with 123 illustrations. Swan, Sonnenschein & Co., Paternoster Square, London.—*Heating by Hot Water*, by Walter Jones; with 96 illustrations. Crosby, Lockwood & Son, 7, Stationers' Hall Court, London.—*O. K.*, 110. *Select Ferns and Lycopods*, by B. S. Williams, published at Paradise Nursery, Upper Holloway, London, N.

BOWLING-GREEN MOSSY: *A Bowling-green*. The subsoil being sandy, no artificial drainage will be necessary. The grasses have died out from lack of nutriment, and allowed Moss to usurp the soil. Do nothing before early September, then dress heavily with heavy loam, wood-ashes, and rotten dung from cow-sheds, or, failing that, from farm-stables, and dig one spit deep. Level and sow grass-seeds, or lay fine clean turf.

CELERY-LEAF MINER: *W. Fulford*. Nip the grubs with the thumb-nail, and remove and burn the worst affected ones.

CUCUMBER WITH LEAF-SPOT: *R. F.* A leaf-blight caused by a fungus of the *Cladosporium* type. The disease is more likely to be checked by preventive treatment than by attempting to cure it at this stage. Ventilation may check it, and Bordeaux Mixture or Strawsonite might be sprayed on at once. To prevent the disease in future, thoroughly cleanse the frames or houses with lime-wash before placing the plants in them. Young plants should also be sprayed with one of the above fungicides as a preventive measure.

CUCUMBERS TURNING FROM GREEN TO YELLOW: *A. K.*, 110. The result probably of coldness in the bed. Fumigation will keep aphids in check, and syringing once or twice a day will do good to

the plants, providing the night temperature is 65°–70°, and that of the day 80°–85° or 90°.

HOLLYHOCKS: *F. D.* Affected with the Mallow fungus, *Puccinia malvacearum*; spray with $\frac{1}{2}$ -oz. of potassium sulphide in a gallon of water. Burn the affected leaves.

LILY-BUDS DEFORMED: *E. and F. B.* *Sclerotinia sclerotiorum*, a minute fungus, is the main cause of the Lily disease, being aided by the presence of "green fly." Spray at once with a solution of potassium sulphide. The bulbs should be examined in the autumn, and all those having minute black bodies (sclerotia) about the size of a Turnip-seed imbedded in the scales of the bulb should be destroyed, as the mycelium of the fungus is in the tissues of such, and will start the disease next season. *G. M.*

MIDGE GRUBS IN WATER: *Twenty-five years' Subscriber*. If you could cover the tank with boards or corrugated sheet-iron, making it quite dark beneath, the grubs would die, and the water not be rendered unfit for laundry purposes.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*E. L.* *Embothrium coccineum*.—*S. A. B.* *Symphytum patens*.—*A. S.* *Medicago lupulina*.—*W. T.* 1, *Geranium pratense*, L.; 2, *Papaver pilosum*, Sibth. and Smith; 3, *Galega orientalis*, Lam.—*Nemo*. *Syringa Josikaea*.—*F. C.* 4, *Allium Moly*; 5, *Scilla peruviana*; 6, *Polymonium ceruleum*.—*J. D.* A good variety of *Dendrobium moschatum*.—*J. M.* 1, *Abutilon variegatum*; 2, *Croton angustifolium*; 3, *Maranta picta*; 4, *Hibiscus Cooperi*; 5, *Acalypha musaica*; 6, *Glechoma hederacea variegata* (variegated Ground Ivy).—*C. S.*, *Luton*. The white form of *Syringa Emodi*.—*Constant Reader*. 1, *Cassia corymbosa*; 2, *Rhus Cotinus*; 3, *Abelia rupestris*; 4, *Philadelphus microphyllus*; 5, *Deutzia crenata flore-pleno*; 6, *Colutea arborescens*.—*Norfolk*. 1, *Cypripedium Stonei*; 2, *Thalictrum minus*; 3, *Dielytra eximia* (Dicentra); 4, *Tradescantia virginica*; 5, *Anthericum liliago*.—*W. A.* 1, *Stachys lanata*; 2, *Ruscus aculeatus*; 3, *Cupressus Lawsoniana*; 4, send in flower; 5, *Peperomia argyrea*; 6, *Pulmonaria officinalis*; 7, *Maranta zebrina*.—*J. T.* 1, *Erigeron odoratum*; 2, *Phlomis fruticosa*; 3, *Ligustrum vulgare*; 4, *Ampelopsis quinquefolia*.—*A. M.* 1, *Carex pendula*; 2, *Lysimachia vulgaris*; 3 and 5, *Veronica amethystina*; 4, *Oenothera Youngi*; 5, *Veronica*; 6, *Tradescantia virginica*.—*W. T.* *Trapeogopon pratensis*, *Agaricus arvensis*, used for Catsup.—*W. D.* 1, *Orchis maculata*; 2, *Habenaria bifolia*.—*B. C.* 1, *Cotoneaster nummularifolia*; 2, *Cerastium tomentosum*; 3, *Veronica Teucrium*; 4, *Polygonum affine*; 5, *Sedum reflexum*; 6, next week. —*X.* 1, *Erigeron maculosus*; 2, *Rhododendron hirsutum*; 3, *R. ferrugineum*.—*E. M.* *Orchis pyramidalis*, *Campanula glomerata*.—*T. T.* *Phlomis fruticosa*, *Chrysanthemum coronarium* var.—*F. H.* *Carduus Marianus*, the Virgin's Thistle.—*W. T.* 1, *Geranium pratense*; 2, *Adiantum capillus-veneris*; 3, *Xylophylla latifolia*; 4, *Woodwardia radicans*; 5, *Cyrtomium falcatum*; 6, Spanish Iris; 7, *Erigeron speciosus*. —*X. Y. Z.* *Crinum longifolium* (Thunb.); *C. capense* (Herb.).

PEACH LEAVES: *J. G.* Affected by the shot-hole fungus. Spray with weak Bordeaux Mixture next spring. Burn all the affected leaves.

PEAS DISEASED: *Subscriber*. A fungus called *Ascochyta pisi* is causing the damage to the Peas. No fungicide has up to the present been successful in checking the disease; Bordeaux Mixture is the only substance at all likely to be of service. Diseased plants should be removed, otherwise the infection will continue to extend. *G. M.*

POOR PRODUCE FROM BEGONIA SEED: *H. L.* The seed must have been saved from inferior varieties. STREPTOCARPUS: *E. T.* Fine specimens, indicative of good culture.

VINES: *H. B. P.* A bad case of spotting from a fungus—*Glaesporium*. Turn the Vines out, and burn them.

COMMUNICATIONS RECEIVED.—*W. B. G.*—*J. J. W.*—*W. K.*—*L. S. S.*—*Smith Bros.*—*J. J. W.*—*E. C.*—*B. W.*—*J. C. & Co.*—*J. J. C.*—*S. Newry*.—*A. S.*, Reading.—*W. G. S.*—*W. E.*—*C. S.*, Townyn.—*E. M.*—*Editor G. M.*—*C. W. D.*—*S. W. F.*—*E. S.*—*W. S.*—*S. A.*—*Aylmer* (next week)

(For Markets and Weather, see p. viii.)



LILIUM WALLICHIANUM GROWING IN MR. T. CRANWELL'S GARDEN,
AT MOUNT EDEN, AUCKLAND, N.Z.



THE

Gardeners' Chronicle

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THE BUTCHER'S BROOM.

THIS remarkable evergreen (*Ruscus aculeatus*) is far too little known. Its willingness to grow under the drip of trees, in places which would otherwise be rendered bare and unsightly, is a sufficient reason for giving its history and culture a little fuller attention than it has hitherto commanded. The plant is a native, thrives on almost any soil in almost every part of the country, and may either be raised from seed or transplanted from its native haunts. The seed remains for a year in the soil before vegetating, and the young plant grows slowly, so that several seasons elapse before the baldness is fully covered, if this method is adopted. On the other hand, the raising of the shrub from seed enables the cultivator to trace its life-history, and thus the better to understand its needs and peculiarities. The root resembles that of *Asparagus*, and the two plants are closely related. Indeed, the young shoots of the Butcher's Broom have been employed in the place of *Asparagus* as a table vegetable, and those who only know the plant in its rigid and spinous condition would scarcely believe how tender and succulent the young shoots are. Though not worth cultivating as a culinary shrub, one can easily believe that, if it were forced, the young growths would be as sweet and nutritious as its better known cousin, the cultivated *Asparagus*.

The genus *Ruscus* contains only a very few species, which are widely distributed through the temperate regions of Europe, Western Asia, and Northern Africa. It eschews extremes of heat and cold. The winters of Sweden on the one hand, and the heat and drought of the tropics on the other, are uncongenial to its tastes. The plant and its allies have been known to the naturalist from time immemorial. Pliny has not overlooked it; he gives us a list of its medicinal properties which the modern disciple of *Æsculapius* ignores, though for many centuries the traditional virtues of root and fruit led to its finding a place in the European pharmacopœia. Among other things, it was used in early stages of dropsy, and a drachm of the powdered root was recommended to be taken every morning as a remedy against ulcers and scrofulous tumours. All this is now a thing of the past. The plant must be grown for the sake of its foliage and fruit as an ornament to otherwise unsightly spots, rather than for economic and medical purposes.

The Butcher's Broom is unique among English plants; but though this is the case, there is scarcely a writer who has described it accurately, even among the earlier authors, who, having few books to crib their knowledge from, usually went direct to Nature. Thus, our never-failing friend, the herbalist, Gerard, who wrote three hundred years ago, and supplied an admirable illustration of almost every one of the hundreds of plants which he describes, gives us an excellent figure of the plant before us, but omits to notice the most striking feature of the young shoots. This consists in the presence of an array of light-coloured scales, which are the true leaves, bearing in their axils the false leaves or cladodes. On the other hand, later writers usually speak as if the true leaves are always present, whereas they disappear almost entirely as the cladodes acquire the full size and take on the functions of leaves.

It may therefore be desirable to give a revised account of the plant taken from the study of the growing shrub in its native haunts. We assume it has already become established, and as it is a perennial the student may see in the months of April to July all the phases of its development. The plant blossoms in March or April, and by the end of June the berry is full-grown but green, and the young shoots are well out of the ground. We will assume that our first examination takes place in April when the young shoots are beginning to force their way through the soil. They will be seen to be soft and tender, and at the base of every one of the false leaves, and of each of the young branches, will be found a true leaf in the form of a delicate bract. Last year's branches will now be in blossom. Later on we examine the shrub again. By the end of June, the young shoots have become well established. They still retain their scale-like leaves in the more tender parts, but where the stems and cladodes have hardened, the bracts have fallen, in order that the functions may devolve on the cladodes. These now twist round at an angle to the stem, so as to admit of the fullest amount of light reaching their upper surfaces. The spines harden, and it will now be possible to see the first indications of next season's inflorescence. Looking carefully at the centre of the cladodes on the upper or inner surface, one sees a delicate outgrowth shaped like a long-pointed arrow-head; below this is a minute swelling, and then a rib running down to the axil of the cladode. Here we see, what Woodward pointed out long ago, that the flower is not properly growing out of the leaf or cladode, "but on a fruit-stalk from the disc of the leaf, which is immersed beneath the outer coat, from whence it may with ease be

dissected." When the fruit is full grown, this fruit-stalk readily separates from the cladode.

The scales now fall away, berries appear where the flowers of March have been fertilised, and the plant proceeds to ripen its fruit, and gather strength for the next flowering season. Meanwhile, how are the flowers fertilised? I believe no one has yet been able to supply us with an answer so far as England is concerned; and I have only this year been brought into close relationship with the plant, and therefore have been unable to make satisfactory observations. We know that the male and female flowers are borne on different cladodes, those which carry the male blossoms being narrower than the others; and that, as a consequence, they cannot readily be self-fertilised. The early season of the year at which the flowers appear, their inconspicuous character, and the spinous nature of the phyllodes, all go to prove that the insect agency, if such be employed, must be of a very humble character, and I shall anxiously await the arrival of another flowering season in order that I may throw light on an interesting problem.

The ovary, which is enclosed in a fleshy cup, is three-celled, and there are usually two seeds in each cell, but they are frequently abortive, so that a berry will often yield but one seed. When ripe, the berry is a bright red, or occasionally yellow, and about the size of a Marrowfat Pea. It makes a pretty table decoration in winter, and when mixed with the capsules of the Iris and other fruits, is very effective. The spines of the cladodes are very sharp, on which account the sprays have often been employed as a *chevaux de frise* for protecting cheese and bacon from the depredations of mice and other vermin. Its nearest allies are the *Asparagus* and *Solomon's Seal*.

The Butcher's Broom has the distinction of being the only monocotyledon in the English flora which assumes the character of a shrub. All the rest are herbaceous. The calyx is inferior and persistent. It can be readily studied if the fruit be removed, when the complex character of the essential organs will be made apparent. We may, I think, conclude from the evidence before us that the Butcher's Broom has developed from a herb into a shrub, and that in so doing it has lost its tender leaves and developed cladodes. As these would be a source of danger to the plant in winter, both by tempting browsing animals, and by accumulating a weight of snow, sharp spines have been evolved. And it will now be easy to see why the flowers appear on the cladodes. Had they developed in the axils they must have had long stalks, or been in danger of securing a too small amount of light and heat. Stalks would be risky, but by appearing on the centres of the cladodes, which have the power to twist round and expose the flower and fruit to the light, the greatest advantages are secured with a minimum of risk. And as the blossoms are small, and do not depend on summer insects for fertilisation, it is possible for them to appear early, and so allow ample time for the ripening of the fruit. *A Sussex Naturalist.*

FLOWER NOTES FROM THE SOUTH-WEST.

THIS year, owing to the absence of genial weather, the season has been unusually late, many flowers being three weeks or more behind their customary time in expanding their blossoms. The heavy rains and strong winds of June have also played havoc with many flowering subjects, and, in consequence, the charms of gardens, whose early summer display is generally replete with attractions, have suffered considerable diminution. The hybrid *Alstroemerias* commenced to expand their flower-scapes shortly before midsummer in warm gardens where the soil is light. These flowers, with their varied tints ranging from deep crimson to cream, are among the most effective occupants of the border when grown in wide masses, their soft hues, merging into one another, forming an harmonious colour-scheme. These plants are quite hardy in the south-west, and

increase in beauty from year to year, the flower-stems often attaining a height of 4 feet. *A. aurantiaca*, whose smaller orange bloom-heads are somewhat later in expanding, is a weed in many gardens, and often overruns a bed, proving almost as difficult to exterminate as Bindweed. The pretty little *A. pulchra* has also flowered beneath a wall, but is apparently almost as tender as the chaste *A. peleriniana*, which rarely succeeds permanently in the open. A fine form of *Anchusa italica*, with large flowers about an inch in diameter, which, I believe, came from Dropmore, has been particularly decorative, and is evidently a very valuable plant for the wild garden, or for a back place in the herbaceous border. *Anomatheca cruenta* has made a spot of soft red with its small spikes in the rock garden; and white *Arums* planted beneath the water level, were crowded with ivory-white spathes in mid-June. The Lupine-like *Baptisia australis*, though an old introduction, is but rarely seen in the border; its deep, purple-blue flower-spikes and distinct leafage render it a decorative plant for the garden. In peaty compost, the pretty *Bletia hyacinthina* is bearing its rose-coloured blossoms in more than one garden; while the delicately tinted *Callirhoe Papaver* is also in flower.

Campanulas of varied sections are covered with bloom, *C. latifolia* in the wild garden, *C. grandis* alba, *C. lactiflora*, and forms of *C. persicifolia* in the border, presenting handsome pictures. Of the latter species, *C. p. alba grandiflora* is a much more showy flower than the type, but its petals appear somewhat lacking in substance. Messrs. Backhouse's variety of the large-flowered form, with rather longer bells, is also a very desirable plant. *Clematis erecta* is in bloom, but it is by no means a showy subject. *Codonopsis ovata*, with its delicate, French-grey bell-flowers, handsomely marked in the interior, is an exceedingly beautiful thing, but its offensive smell, reminding one of the effluvium emitted by flowers of *Arum crinitum* when freshly expanded, deters a close inspection. *Convolvulus mauritanicus*, veiling the rocks with its blossoming trails of tender blue, is now a charming sight; while in damp, peaty soil the Moccasin Flower (*Cypripedium spectabile*) is bearing a goodly company of white, pink-lipped blossoms.

The Delphiniums are fast approaching the zenith of their beauty. A few of the newer named varieties, such as *Cantab*, however, is pretty, with pale blue tint. *D. Brecki* is a plant more curious than beautiful, producing its deep-blue flower-spikes close to the ground, and thus lacking the characteristic noble stature of the type in the same manner as *Cupid* and its varieties do that of the typical Sweet Pea. *Eremurus Elwesii*, with its 3-feet long flower-spikes, has been a notable object at the back of certain herbaceous borders; and the tall *Irises*, *orientalis* (syn. *ochroleuca*), *aurea*, and *Monnieri*, have crowned their noble foliage with tall bloom-scapes; while *I. Gatesii* has perfected its delicately-pencilled blossoms. *Incarvillea Delavayi*, a plant of somewhat recent introduction, has proved particularly vigorous this season, throwing up flower-stems 2 feet 6 inches and more in height, and bearing eight blossoms on a single stem.

Of Lilies, the first to bloom was *L. pyrenaicum*, the beauty of whose chrome-yellow, red-anthered flowers is considerably discounted by their unpleasant odour. Certain varieties of *L. bulbiferum*, *L. umbellatum*, and *L. Thunbergianum*, have also come into flower, as have *L. Martagon album* and its smaller forms, *L. M. dalmaticum* and *L. M. Catani*, as well as the beautiful *L. Szovitzianum*, whose clear yellow flowers, sometimes self-coloured, and sometimes dotted with minute black spots, are unique in the Lily-bed. This Lily is apparently of good constitution, and is in vigorous health in some south-western gardens. *L. Hansoni* has also commenced to flower, and before the close of June *L. candidum* had expanded its blossoms in a few favoured spots. As a rule, the latter Lily is in full beauty in this locality by midsummer. Two attractive Mallows, namely, *Malva lateritia* and

M. Munroi, are now in flower. *Mertensia sibirica*, a plant of more vigorous growth than its relative, *M. virginica*, has reached a height of between 2 feet and 3 feet, and produced numerous clusters of porcelain-blue flowers.

The *Mesembryanthemums*, though affording a brilliant spectacle during the sunny hours, have suffered in appearance owing to the expanded blossoms becoming sodden with the heavy rain. The vivid scarlet *M. tenuifolium* is the brightest of all, and, after a spell of hot weather, presents a glorious blaze of colour on plants 2 feet or so in diameter. *M. roseum* is the hardiest and freest-blooming of all, but its rose-coloured flowers have a hint of magenta in their hue which renders them less acceptable in the garden than crimson, scarlet, and orange. The deep pink *M. edule* produces flowers often over 4 inches in diameter, and being of a creeping habit, is useful for clothing rocks and stonework. The rose-crimson *Modiola geranioides* is now in flower, as is that most beautiful of all the Evening Primroses, *Oenothera marginata*. Its large, cupped white flowers are deliciously fragrant and produced in rapid succession. For a position in the rock-garden, where the flowers are on a level with the eye, this plant forms a most fitting selection. *Ornithogalum arabicum*, a bulb that does not always flower well in the open even in the south-west, has made a fine show this season with its many-flowered trusses of large, ivory-white, black-centred blossoms; and *O. pyramidale* has also been ornamental. *Ostrowskia magnifica* is about to flower in several gardens, one plant that I saw but a few days ago being already almost 6 feet in height. *Pancreatum illyricum* flowered well in May, one clump producing six fine bloom-spikes. *S. W. F.*

(To be continued.)

KEW NOTES.

VERATRUM CALIFORNICUM.—Striking as are some of the *Veratrum*s for their foliage and appearance, the subject of this note is the best of them all. As the name implies, it is a native of North-western America, where it is found growing among other places, in the region of the Wellingtonias. It is a stately plant from 5 to 6 feet high, with leaves 9 inches wide and 14 inches long, surmounted by a 2 feet panicle of greenish-white flowers. It has attained the above proportions in a border, but probably it would grow still larger on the edge of a lake or stream.

IRIS AUREA VAR. *INTERMEDIA*.

This plant appeared amongst a batch of seedlings of *Iris orientalis*, the seed of which was received from Asia Minor. It is evidently intermediate between *I. aurea* and *I. orientalis*. With the deep yellow colour of *I. aurea*, it has the narrow standards of *I. orientalis*. The limb of the fall is ovate, not long and elliptical as in *I. aurea*, but it shows its affinity to that species by having the same crisped margin. It flowers at the same time as the latter, just when the last flowers of *I. orientalis* are disappearing. It is a welcome addition to the number of late flowering *Irises*. *W. I.*

ORCHID NOTES AND GLEANINGS.

DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDÉES.

THE May number contains coloured illustrations of the following Orchids:—

ARACHNANTHE LOWII VAR. *WAROQUEANA*.—One of the curious dimorphic Orchids.

CATTLEYA TRIANEI VAR. *MASSANGEANA*, Rehb. f.—A variety having lilac stripes on a pale ground.

CYPRIPEDIUM NITENS VAR. *SALLIERI*, Hansen.—A hybrid between *C. villosum* and *C. insignis*.

CYPRIPEDIUM HELVETIA, O'Brien.—A hybrid between *C. Chamberlainianum* and *C. Philippinense*, described in our columns by Mr. O'Brien.

DENDROBIUM SPECTABILE, Miq.—A singular form with three-lobed lip, upper lobes rounded, upturned; central lobe lanceolate acuminate; all with a purple network of veins on a whitish ground. Segments yellow; flowers in racemes.

DENDROBIUM DEVONIANUM, Paxt.—Flower-segments white tipped with violet-pink; lip fimbriate, rounded, with two yellow spots at the base, and a violet blotch in front.

LELIA ANCEPS VAR. *ALBA*, Rehb. f.

LELIA JONGHEANA, Rehb. f.—Flower-segments spreading, flat, lilac; lip projecting, convolute at the base, with a frilled lobe in front; throat traversed by yellow raised lines.

LELIA SUPERBIENS, Ldl.—Flower-segments narrow, spreading, rosy-lilac; lip projecting, three-lobed, two basal lobes, rounded, erect; anterior lobe much larger, with a yellow throat.

MASDEVALLIA BELLA, Rehb. f.—Flowers triangular, creamy-yellow, with purple spots; segments prolonged into long tails; lip much shorter, shell-like hyaline.

ONCIDIUM PHALANOPSIS, Rehb. f.—Flowers racemose, segments white with purple spot; lip flat, three-lobed, white.

ONCIDIUM INCURVUM, Barker.—Flowers white, with narrow violet segments; lip three-lobed, anterior lobe rounded.

PESCATOREA KLABOCHORUM, Rehb. f.—Flowers large, segments oblong acute, white with violet tips, spreading; petals smaller; lip violet-purple veined, and with a raised transverse process at the base.

FORESTRY.

GAME COVERTS AND SYLVICULTURE.

(Continued from p. 5.)

OF course, soil and situation greatly affect both quality of timber and underwood, but unless on the very best ground, I have never seen the Oak make long, clean stems unless standing close enough to render the underwood beneath of firewood value only, say 20s. to 30s. per acre.

To bring woods of this kind into the condition pictured by Prof. Schlich, and to keep them in that condition on game-preserving estates, is not an easy matter. The first thing that requires doing is the taking out of as many wide-crowned trees as possible, even if patches of ground are entirely cleared in the process. This gives room for planting clumps of Oak and Ash, which can be surrounded by wire netting for four or five years until out of danger, while stout Ash four or five feet high can be put in wherever room exists for them. To fence off every piece of underwood when cut in order to protect the newly-planted standards, is out of the question on most estates. The netting requires to be kept up for at least four or five years to be of any use, and with underwood cut every ten years, this would mean the netting-in of half the entire area, an extent which no proprietor who studied his shooting would allow. Even with planting at intervals of twenty years, one-fifth of the area would have to be enclosed in this way, and I think few proprietors, and certainly no keeper, would approve of even this proportion being partially removed from his unrestricted beat.

But whatever plan be adopted for protecting the planted trees, their subsequent success practically depends upon the suppression of the underwood for 2 or 3 yards round about them, until they are out of danger of being overtopped, or drawn up too spindly. If planted at 6 or 8 feet apart, the whole of the intervening underwood must be cut back for three or four years, for head-room alone will not do when the surrounding underwood gets several feet ahead of them, as it does by about the third or fourth year if not cut back.

To raise Oak standards under these conditions, and on the principle advocated by Prof. Schlich, therefore, three or four times the time and attention now bestowed upon such woods would have to be expended; and on estates where the forester's staff is reduced to a minimum, or he has other duties to perform outside the woods, this is not easy to arrange. It is very rarely that the more important covers are shot through before the end of December, and whatever work of any importance has to be done must be carried out in the first four months of the year, or in early autumn, August or September. During the nesting season, and the last three months of the year, all wood-work must be suspended, and in the remaining period at his

disposal, the forester usually has his hands full, and finds but little time for any but very necessary work.

In old coppice woods, again, it is very rarely that the coupes and rides are so arranged that the former can be conveniently or economically netted round without crossing the latter; and in such cases gates have to be provided, and gates mean that rabbits soon gain an entrance to the enclosed area. In woods with rides laid out for shooting purposes only, and which run at right angles to each other, no great difficulty presents itself.

number scattered over one or two hundred acres, as the case may be. With the grouping system, the area enclosed by netting need not amount to more than 5 per cent. in any case; and in small woods, periods may elapse between the planting-years in which it can be removed altogether. The under-wood or coppice will be less valuable, perhaps, but in Professor Schlich's example this does not make more than 13 per cent. of the total yield, which will be more than balanced by the increased production of timber in the groups, and sufficient underwood can be grown to provide the

patches of rough grass, &c., will be included, for such growth is the most important element in all-round game covert, however objectionable it may be from a sylvicultural standpoint.

If proprietors of woodlands would ignore keepers' fads, and be content with a reasonable head of game, forestry and game preserving might go hand-in-hand fairly well, but so long as the woods are valued more for the number of birds they will hold than the timber they can grow, it is in vain that we shall look for any marked improvement in their management. *A. C. Forbes.*



FIG. 4.—ROSE PINK ROAMER.

With all due deference to Professor Schlich's opinions, therefore, I hold that in woods of the kind we have to deal with here, and under the existing conditions, even aged groups of standards, with Hazel and Ash underwood, are more easily raised and managed, and will produce cleaner and better timber than standards grown on the orthodox principle by mixing up all age classes together. As regards the question of cover, there is practically no difference between a fifteen or twenty years' growth of coppice and a young group of timber-trees of the same age or even older; and as a question of economy, it is much simpler and cheaper to raise a given number of standards on a compact area of four or five acres, than the same

necessary cover, and protect the soil at the same time.

So far as game covert alone is concerned, I am convinced that one system of forestry is as good as another, provided areas of suitable size are cleared and replanted at proper intervals. Three parts of the cry for artificial covert arises from the too uniform condition of entire woods or large areas, and if proprietors generally would only adopt a proper system of clearing and replanting, or its equivalent in sylvicultural language, British woods would soon show a marked improvement.

Of course, some concessions must be made by the forester, and amongst these a reasonable toleration of surface vegetation in the shape of Brambles,

ROSE PINK ROAMER.

(SEE FIG. 4.)

THIS beautiful single-flowered Rose was exhibited by Messrs. W. Paul & Son of Waltham Cross, Herts, at the Royal Horticultural Society's meeting at the Drill Hall, Buckingham Gate, on June 5 last. The variety is a cross between *Rosa Wichuriana* and another unknown variety or species. It is a rambling Rose, making shoots of great length, and flowering with much freedom. The flowers measure from 2 to 3 inches in diameter, and are of a rich rose-tint, and have a white centre. It received an Award of Merit when shown at the meeting.

PLANT NOTES.

CAMPANULA ABIETINA.

THIS distinct *Campanula* is not always satisfactory, and I rarely see a note about it to say how it does in other gardens. Flowers are borne freely at the beginning of July, not unlike those of *C. patula*, but larger; but although the plants, when first flowering, show compact and dense tufts of radical leaves, the tufts soon get a straggling untidy habit, and do not flower well again.

It seems to me to flower best in alternate years, but not in the same place. After flowering I cut it down, and when it has recovered, I take off the most vigorous parts of the tuft and transplant them, watering them well. These generally grow through the next summer without flowering, but flower well the second year. In this way, by a little management, flowering plants may be had every year; but with me, if neglected, the stock is soon lost. I wonder whether it is more persistent in the same spot on other gardens if left to itself. *C. Wolley Dod, Edge Hall, Malpas.*

THE HERBACEOUS BORDER.

ASTRANTIA HELLEBORIFOLIA.

INCONSPICUOUS in their colouring, the *Astrantias* or *Masterworts* are not held in high favour by those who like brightly-coloured flowers. At the present time the subject of this note, perhaps the best of the genus, is in bloom in my garden, which I can see by giving a turn of my chair. Although it is pretty as thus seen with its heads of flowers, which look pale pink a little distance away, elevated on stems some 3 feet high, it is much more pleasing when one walks up to it and studies the combination of colours these blooms give. The involucre which surround the little flowers, which in an umbel (for the *Astrantias* belong to the Umbelliferae) makes up the centre, are pale pink, tipped with bright green on the under surface, and a deeper green on the points above. The flowers themselves show a pleasing harmony of palest sea-green and pale pink, through which one sees the deep crimson of the centre of the involucre whence the flowers spring. The leaves are pleasing with their three-lobed formation, and the whole plant is pretty to look at a little distance away. This species is of very easy culture, and is indeed a little apt to need restraint in some gardens, where it runs much at the root. In the light and dry soil of my garden it grows well, although theoretically it ought to have a moist position. *Astrantia helleborifolia* is a native of Carniola, and was introduced in 1804. It often passes under the name of *A. maxima*, but *helleborifolia* is now that generally accepted. It may be grown from seeds, or increased by division of the roots in spring or autumn. It begins to bloom in June, and lasts in flower for several months, especially if it be prevented from forming seed.

INCARVILLEA DELAVAYI.

We have had few introductions within recent years among hardy border-flowers which will equal in point of beauty the fine *Incarvillea Delavayi*. Its handsome *Gloxinia*-like flowers, with their rich colour, are surpassed in beauty by any other hardy herbaceous perennial. It looks, however, to some to be a plant too tender for our climate, and those who have been disappointed with its congener, *I. Olga*, were not to be blamed for fearing that *Delavayi's* plant would not be reliable in our gardens. Fortunately, their fear has been groundless, and what I consider a somewhat severe test, makes me recommend this species more strongly. With a view to test it thoroughly, I planted it in what I consider the coldest and most unfavourable part of my garden for a plant whose hardness may be doubtful or unproved, namely, a border facing almost north-east, and where scarcely half an

hour's sunshine reaches it in the course of the day, and no shelter is afforded. Here an old and two young plants of *Incarvillea Delavayi* have been grown for two years. The young ones have not reached flowering size, but the older plant has flowered twice, and has stood out two winters without any kind of protection. It is now in bloom, and the test has been severe enough to satisfy me. Last spring was very trying for plants in that aspect, and for the first time in my knowledge even, a plant of *Clematis Jackmanni*, which was planted in the same border fifteen years ago, was killed after it had made some growth. At that time *Incarvillea Delavayi* was snug under the ground. So long was it in putting in an appearance, that I began to be afraid that it was fated to be numbered among the lost. Fortunately it came up all right. This plant ripened seed last year.

DIANTHUS HYBRIDUS "BEAUTY."

Recent years have given us many good plants which have originated in nurseries where these forms have appeared as the result of hybridisation or of natural variation. The *Dianthus* have been very prolific of such forms, to the lasting benefit of all those who admire these charming and generally deliciously-fragrant flowers. The increasing taste for single flowers has also led to the retention of seedlings which would some years ago have been destroyed because they were single, however beautiful they were in other respects. A striking and beautiful single *Dianthus* has been grown here for several years, and it is so effective just now that I feel it ought to be named for the benefit of others. It is called *Beauty*, and it receives universal admiration from those who see it. It is a fine rock-garden plant, but is suited for the border as well, a position in which it cannot fail to be of use because of its upright habit and its free flowering. Even an old plant gives flowers at least 2½ inches across; these are of the purest white, perfectly circular, with a broad zone of dark maroon in the centre, and beautifully fringed. It reminds one of some of the *Cyclops* forms, but is prettier than any of those, besides making more "grass," having a neat habit of growth, and needing no support. *S. Arnott, Carsethorn-by-Dumfries, N.B.*

VERONICA NEGLECTA.

There is a plant figured under this name in *Sweet's English Flower Garden*, tab. 55. It is one of those many garden forms of herbaceous *Veronica* which may puzzle the botanist, but I have no doubt it is *V. incana* × *V. spicata*, as it has at various times appeared in various places in my garden, always where these two assumed parents grew near one another, and the spontaneous seedlings were left. The form of *V. spicata* which suits the cross best is var. *hybrida*. The cross is better as an ornament than either parent, being very compact and flowery; the flower-spike is long, and the glaucous leaf of *V. incana* being reproduced. The hardy herbaceous *Veronicas* are not, as a rule, first-class, but as they are very prone to form hybrids, a good one may now and then be picked out in this way, where chance seedlings are left till they flower. *C. Wolley Dod, Edge Hall, Malpas.*

THE ROSARY.

ROSE SPORTS AND SEEDLINGS.

It always seems to me that in our Rose lists and catalogues it should be most distinctly stated whether a new Rose is a sport (or what the French call *un accident fixé*), or a genuine seedling, and this for two or three reasons. In the first place, I do not think as much credit is due to the originator of a new sport as to the raiser of a new seedling. A grower walking through his ground notices a Rose which is different from all the others on the same plant; he at once sees that it is something that ought to be looked after, and as soon as he persuades himself that the new variety is likely to be a valuable one, he sets to

work to propagate it. He has, however, had no share in producing it, and therefore I do not think that much credit is due to him. In very many instances the sport refuses to be fixed, and I have known a case where for years the attempt has been made, and had at last to be abandoned. As a rule, the sport exhibits flowers of the same shape and substance as that from which it originated, and is in all respects its counterpart, except in the matter of colour.

Another reason why sports ought to be especially mentioned is, that some of them have an unpleasant way of reverting to the type; a notable instance of this occurred in the case of that remarkably-coloured Rose, *Sir Rowland Hill*. A beautiful box of it was exhibited at the National Rose Society's exhibition at Edinburgh in 1887, and obtained a Gold Medal of the National Rose Society as a new Rose. The exhibitor did not state whether it was a seedling or a sport, and it was believed to be a seedling; had it been stated that it was a sport, I think the judges would have asked that it might be shown again. Many were attracted by its beautiful claret colour, and it was extensively sold (and so were those who bought it!), for the following season complaints came in from all quarters that it was nothing but *Charles Lefebvre*, and purchasers complained that their plants were nothing but that fine flower. Now had it been stated that it was a sport, I think purchasers would have held back until they could hear more about it. I do not think that there is any very great credit in sending out a Rose of this character. I once found in a friend's garden in the north, that very beautiful Sweet Briar sport *Janet's Pride*, but I never claimed any credit for the discovery; and when after a time I presented some plants of it to my good friend Mr. George Paul, who sent it out, I would not have my name in any way connected with it, as I was sure it would give a false impression to Rose growers—and yet I think there are few flowers which have gained greater popularity than this has done.

Another Rose which has gained the Gold Medal has been that very beautiful one of Mr. Piper's *Sunrise*; this is a sport from *Sunset*, which is itself a sport from *Perle des Jardins*, and I think we may look upon this now as really fixed—a large number of plants have been distributed, but I have not heard complaints of any as reverting to the type. The Rose from which they both sprang is one which is very apt to divide; but I do not think the same complaint is made of *Sunrise*, owing perhaps to its not being quite so full of petals. These sports, however much they may differ in colour, nearly all retain the form of the type. I say nearly all, because some doubt has been thrown upon the origin of *Merveille de Lyon*, some saying that it is a seedling from *Baroness Rothschild*, others that it is only a sport of that flower from which it so widely differs in form, that I think following the rule in such cases it must be a seedling, and not a sport. Several sports come to us from America, but they are variable in their character.

When I contrast seedlings with sports, I do not refer to those seedlings which in former days came from heaps gathered at haphazard from the Rose-garden, but as always now-a-days (at any rate with our home-raised flowers), when they are the results of careful cross-breeding, and when a good deal of judgment has to be exercised as to what parents should be selected for the cross. If anybody will refer to the treatise on the *Hybridisation of Roses* by Mr. Walter Easlea, published by the National Rose Society, he will see how much judgment is necessary in this matter, and therefore he will see how much more credit is due to those who, proceeding on scientific principles, endeavour to give us the results of their judgment and experience. I believe I am not far wrong in saying that this artificial crossing was not exercised by any foreign Rose-grower until quite recently; and yet it is somewhat remarkable that since they have professed to carry it out, they have produced no flowers among the dark-coloured section comparable to

those which they sent us in former years. A. K. Williams, Alfred Colomb, Charles Lefebvre, Dr. Andry, Duke of Wellington, Fisher Holmes, General Jacqueminot, Horace Vernet, Louis Van Houtte, Marie Baumann, Prince Camille de Rohan, Reynolds Hole, Xavier Olibo, are Roses which were raised in what I might call the pre-scientific period, many of them between thirty and forty years ago, and yet there has nothing been produced during recent years which can at all equal them. I think this is a very remarkable fact, and I cannot but cease to wonder why it is now that we get none of these high-coloured Roses from the continent.

It is the same way with the Teas; the old varieties, such as Anna Olivier, Comtesse de Nadaillac, Catherine Mermet, Rubens, Devonensis, Innocente Pirola, Jean Ducher, Madame Cusin, Marie Van Houtte, Niphetos, Souvenir d'Elise Vardon, Souvenir d'un Ami, still hold their place amongst the very best of the kind. In fact, although new Teas are every year advertised by the dozen, very few find their place in the front rank; while in those that are announced, we find the parents now-a-days very frequently put forward. The interest which is taken in Roses is evidenced in various ways: thus the other day I had a letter from a correspondent who wanted very much to know if there was any book published, either in England or abroad, which would enlighten her as to the parentage of our Roses. I answered that so far as I knew there was none, and in fact as regards some of our oldest and most valued varieties, it seemed to be impossible, because we knew nothing whatever concerning some of them. There is one other point in connection with these sports to which I have alluded, which is of some interest, namely, why it is that the Rose and the Chrysanthemum are the only florists' flowers (so far as I know) which are subject to this variation. I never knew, for instance, a sport of the Carnation or Picotee, the Dahlia, or the Auricula. [We have frequently seen sports from all of these, and have no doubt they are much more common than our correspondent suggests. Ed.] And why these two flowers should be so subject to them, is one of those mysteries which I suppose we cannot solve. The Rose is a flowering shrub, and the Chrysanthemum a herbaceous plant; and though so unlike in character, are similar in their tendency to this accidental variation. There is one Rose, a favourite everywhere, and unsurpassed in the brilliancy of its colour and its many excellent qualities, of which, I believe, the parentage is not accurately known—I mean *Maréchal Niel*. We had hoped ere this that something might have arisen from it, but it still remains *facile princeps* amongst yellow Roses. *Wild Rose*.

MARKET GARDENING.

STRAWBERRIES.

THAT the cultivation of Strawberries for market has become a large industry in some counties no one will deny, and in spite of the increased quantity grown, it is an industry well worth engaging in by those who possess the necessary knowledge and capital. The matters of situation, suitability of soil, and railway facilities, must receive due consideration before making a beginning, otherwise the venture may turn out anything but a success.

The fact of having a railway within easy distance must not be thought a sufficient reason for ensuring that quick dispatch of the fruit that is necessary when picking is in full swing. The directors of the London & South-Western Railway does what may reasonably be expected of such an enlightened company, it fits up vans for the carriage of the fruit, which it conveys in special trains at hours convenient for the market-growers. When it is considered to what a high pitch the growing of Strawberries has arrived in some parts of the country, the subjoined startling figures will not appear so very startling to those persons who are acquainted with this industry. In the Sarisbury (Southampton) district there are more than 5,000 acres under Strawberries alone.

From Swanwick and Botley stations, which are both in the district, no fewer than 61,180 baskets, or 130 tons, of Strawberries left these two railway-stations on June 25. This represents but one day's picking. Figures like these go far to prove the vastness of the quantities of Strawberries gathered, and the great extent of land under this crop. I have seen as many as 26,000 baskets of fruit standing on the railway platform at one time. Numbers such as these show the necessity of special facilities for coping with the transit to the great centres of population.

The site of a Strawberry-field should by preference be on a gentle slope to the south, with shelter from north and easterly winds, usually prevalent in the months of April and May, more especially in the eastern counties. The quality and texture of the soil is of equal importance to the site, for although the Strawberry is a plant that will grow in a great variety of soils, there are certain kinds of soil which are fatal to its successful cultivation, for instance, one that is chalky or water-logged. Abundance of moisture at the roots is necessary at certain times, but there must not be a superabundance during the winter months. An ideal soil is a deep, sandy loam, because it is easily worked, retains moisture, is much warmer than any other, and therefore conduces to the early ripening of the fruit, a point that must not be lost sight of by the market cultivator. Indeed, it is one of the most important when the profitable side of the enterprise is considered. If the subsoil allows of the rapid percolation of moisture after heavy and continuous rains, and the soil does not contain any excess of lime through the presence of chalk, Strawberries will succeed if the cultivation is suitable.

I know acres of land occupied with Strawberries that have the appearance of a field sown with pebbles, so numerous are they on the surface; yet Strawberry-culture is a success. In soil in which culinary Peas thrive, Strawberries will flourish; potash is the chief mineral food of the Strawberry, as it is of Peas. Peas do not thrive in chalk soils, the growth being stunted and the haulm of a pale tinge, as though it was deficient in chlorophyll.

The preparation of the soil has an important bearing on the crop; and an excellent preparatory crop is one of Potatoes, especially an early variety. Clean cultivation and manure in quantity being necessary for the Potato, and the early digging of the crop of Potatoes allows the grower to plant his Strawberries at an early date. If the soil is somewhat heavy, and has never been cultivated 1 foot in depth, it will be necessary to trench it. A poor soil should be well manured at the rate of 25 tons of half-rotted farmyard-manure per acre, which should be mixed with the top spit, the roots of Strawberries not going deeply into the soil.

The best time at which to plant is early in the month of August. September, as a rule, is not a favourable month, the weather being usually dry, so that rooting does not take place readily. The month of October is often favourable for planting, and all planting should be finished before the month is out. The object of early planting is to enable the plants to become established before the cold weather begins, to make early and strong growth in the spring, and afford a quantity of handsome fruit the first year. Of plants put out in spring, it may be stated that they neither produce fruits, nor make vigorous growth the first year, and thus much time is lost.

The preparation of the plants is a matter that does not receive proper attention in some instances. The commoner method is to take the runners from the plants after the crop is gathered, irrespective of how they may have been treated, or of the age of the plants. It will be obvious to most readers that plants four or five years old are unable to produce runners having the vigour of those taken from plants of one year old; moreover, the ground not having been trampled upon so much, the runners are not injured to the same extent.

Runners should whenever possible be taken from a young plantation; and as soon as the runners

form, a workman should be sent along the rows lightening the soil with a hand-fork directly beneath the runners, and make them secure in their places with a stone or a clod. If this operation be carried out in the months of June and July, strong, healthy plants, well furnished with roots, will be available early in August for forming new plantations. Some cultivators layer the runners in small pots, a system that answers very well when a small number is wanted; but where thousands of plants are required, layering in pots is too laborious. Young plants dug up and planted without delay start into growth more readily than others grown in pots, more especially if the roots of the former cling to the pots closely. Under all circumstances, then, the preparation of the plants in the open ground is preferable to layering into pots.

If there is one phase in Strawberry-culture on a large scale of more importance than another, it is that of variety. To the market man in a general way the question of flavour, or in other words quality, is of secondary importance as compared with early ripening. One week will lower the price from 10s. to 5s. per gallon, and that is a serious matter to the Strawberry cultivator. Of course, the customer demands reasonable size as well as earliness. For example, King of the Earlies is the first variety to mature, but the fruit is so small as to be practically unsaleable, at least with a reasonable return for the cost of production.

It is a mistake to grow many varieties, unless in a small way for testing purposes. Cultivators of thirty or more acres generally confine themselves to four varieties. The following I can well recommend for cultivating on either small or large scale, for I have had many opportunities of seeing them under cultivation, and am able to speak with the greatest confidence of their merits. Placed in their order of ripening, Laxton's Noble comes first. It was awarded a First-class Certificate by the Royal Horticultural Society when shown at South Kensington in 1884, and received an Award of Merit two years later. Its exact parentage seems a little doubtful, but it was said to have been obtained from Forman's Excelsior, crossed probably with Sharpless, an American variety introduced thirty years ago. The plant is very productive, the fruit of large size, broadly conical in form, and of a bright crimson colour. The flesh is soft, and the flavour only moderately good. As a rule, it ripens four days before any other variety, and for that reason alone it deserves to be cultivated. Leader, another of Laxton's raising, is likely soon to take a high position as a market variety. It is the result of crossing Latest-of-All and Noble, and it received an Award of Merit from the Royal Horticultural Society in 1895. The growth of the plant is moderate, the fruit very large, wedge-shaped, or bluntly conical. The flesh firm, of a deep scarlet colour, and excellent flavour, and borne in great abundance; it ripens about four days later than Noble, and is, perhaps, the best market Strawberry in existence.

Royal Sovereign, another of Messrs. Laxton's varieties, was obtained in 1892 from Noble crossed with King of the Earlies; it has an excellent constitution, growth vigorous, producing large obovate, or oval leaflets; the fruit is extremely large, conical, or flattened in shape; of a bright, glossy-scarlet tint, with white, rich, firm flesh. It ripens about the same time as Leader, and should be grown wherever the plant succeeds.

Sir Joseph Paxton is still the most generally cultivated of all varieties, but it is doubtless destined in course of time to make way for those which I have named. The more advanced cultivators are now substituting Leader and Royal Sovereign for Sir Joseph. This old variety crops freely, the plant grows strongly, and the fruit is large, handsome, rich in colour, and of good flavour. Moreover, the fruit being firm, bears transit without injury. In recent years this variety has shown a tendency to "go blighty," as the growers say, during spells of wet weather, and the fruit a liability to be attacked by fungus at different

stages, which prevents its swelling. The sudden occurrence of low temperature appears to me to be responsible for the attack. The variety will continue to produce fruit for a longer period of time than any other, and on that account alone it is a valued market Strawberry.

When alluding to the planting, I omitted to say at what distance the plants should be arranged. The rows require to be 30 inches apart, and the plants in the row 15 inches. This width between the rows admits of the land being cultivated with a horse-hoe, which is a great advantage. As soon as the crop of fruit is cleared off, the preparation of the plants for another season's crop must be taken in hand. With an ordinary bagging-hook (a large, heavy sort of sickle), the leaves are cut from the plants, all runners cut off, and weeds cleared away. New leaves with short stalks soon form, which give good protection to the crowns in the winter.

In sandy loams digging among the plants is not practised, and it remains undug for usually four years, and rarely five and six, the utmost age of a plantation. At no time should weeds be allowed to get ahead to any great extent, as they rob the soil to the detriment of the Strawberries. In the spring the surface-soil is stirred and freed from weeds before "bedding down" is done, i.e., just previously to the plants coming into flower, long strawy manure or Barley-straw being employed.

The manuring of established plants receives much attention, and a variety of circumstances have to be taken into account in its application to the land. In some kinds of land the plants continue to fruit and grow satisfactorily after being well manured at the start without any additional manure whatever. A good guide to the grower in this matter is the quantity of leaves that the plants make annually. Too much foliage is detrimental to the production of a big fruit crop, and as also is too little.

Farmyard manure is a valuable stimulant no doubt, but its application is costly, and it is at times and in some places difficult to obtain. Moreover, where annual digging between the rows of plants is not practised, farmyard manure as a fertiliser is almost useless; and chemical manures are employed in its stead. The usual dressing consists of basic slag and kainit, at the rate of 3 cwt. of the former to 4 cwt. of the latter per acre. As this dressing is slow in its action it should be applied early in the month of November, so that the autumnal rains may assist in its assimilation by the plants. Early in the spring a dressing of some quick acting manure should be afforded. A chemical manure known as the Manchester Manure is highly thought of by many of the cultivators in the district around Botley and Southampton, it is sprinkled on the surface at the rate of 7 cwt. per acre, and its action as noticed in the foliage is very rapid.

Retarding the ripening of the fruit, so as to extend the season during which Strawberries may be enjoyed, even if it be only for a fortnight, is a point worthy of consideration. How this may be done I am not at the present moment quite prepared to say. Perhaps the prompt removal of the first flower-trusses might induce others to form, and the fruit thus delayed several weeks. An experiment of this nature is worth a trial on a large scale. *E. Molyneux.*

ENORMOUS HAILSTONES.

If anything would induce a market-gardener, or indeed any possessor of glasshouses, to insure against damage by hail by belonging to the Nurserymen, Market Gardeners', and General Insurance Corporation, Limited, it would be a heavy bombardment from out of the blue with such missiles as those delineated of actual size on p. 27. The "stones" were photographed by Mr. Warland Andrews at Abingdon on June 12, and we are indebted to the kindness of Mr. A. J. Monro, the manager of the aforesaid Corporation, for the opportunity of reproducing the photograph.

NURSERY NOTES.

MR. AMOS PERRY'S HARDY PLANT FARM AT WINCHMORE HILL.

I PAID a visit to this establishment late in the spring, but found, as I had feared, I was a month too early, many of the best things being only just in evidence, and some yet dormant, and still under the soil. However, I made a few notes, making a mental resolve to come at a later date. The late May frosts had punished severely German and other Irises and Day Lilies, so that a display of these handsome flowers, ordinarily a feature here, was a poor one. On enquiry, I found that the greater number of the plants are raised from seed, these proving hardier and more lasting, while if the seed be saved (as it is) from the best examples only, which, as a rule, are the smallest seed producers, the result is almost always an advance on the parent, either in size, colour, or habit.

This is not, however, the case in every instance; for example, the seedlings of the Alpine and Appenine Phloxes show a tendency to excessive degeneration, and as yet we have nothing finer than *Phlox setacea atro-purpurea* as a rock plant. A few of the most striking things noted are as follows, taken down as seen, with no attempt to classify:—*Arenaria grandiflora*, the large Swiss Sand-wort, covered with multitudes of snow-white blossoms, which in its natural habitat appears like patches of snow; this is an excellent plant for a dry bank or rockery. *Erigeron sauliginosus*, a very early flowering "Stenactis," as it used to be called, and very like *Stenactis speciosa*.

Of Geums there were many fine hybrids between *atro-coccineum*, *miniaturum*, and the yellow *montanum*; the more noticeable being *G. aurantiacum*, of a brilliant orange-red colour, the flowers of large size, and another being notable from its large deeply cut radical leaves, which change in early autumn to a deep purplish-crimson hue, and remain in evidence for the greater part of the winter; *G. Heldreichi* × *montanum* was carrying flowers quite $1\frac{1}{2}$ inch in diameter, of a brilliant orange hue, almost as pronounced as that of Fortune's variety of the Asiatic "Globeflower," *Trollius Fortunei*. Near this plant, *Trillium grandiflorum* and its black form, *T. g. atro-purpureum*, were remarked, just a little past their best, but still quite attractive. In the vicinity, the handsome foliage of another North American plant called for notice, viz., *Podophyllum peltatum*, which furnishes the podophyllin so much used by homœopaths; this plant, if only for the sake of its handsome foliage, should find a place in every border of hardy herbaceous perennial plants.

In a receptacle made for holding water, I noted the Arrowhead (*Sagittaria latifolia flore-pleno*), flowers white, and remaining on the plant for a great length of time. The single and double-flowered forms of *Orobis vernus* were very pretty, the latter being quite an acquisition to the spring garden. A bright golden mass, which at first sight I took to be *Alyssum saxatile*, proved on near inspection to be one of the golden Spurges—*Euphorbia polychroma*, but why many-coloured I could not understand, as it was uniformly golden in hue. Near it were rows of *Heuchera*, *H. sanguinea*, and its white sport, but the finest of the genus is *Heuchera rubescens*, though it is later in flowering. *Mertensia virginica* and the Canadian Phlox (*P. canadensis*) were in full flower, the latter at first sight more resembling the common Soapwort in style and habit.

Mr. Perry has glass for propagating purposes only, and for the raising seedlings; and he has a moderate success with the difficult *Romneya Coulteri*, which, though the seed is of his own saving and quite fresh, takes at least two years to germinate, and the great difficulty is to keep the seed-pans free from weeds, and to remove the plants while yet very small, or the young minute seedlings of the *Romneya* get disturbed, or uprooted with them.

In one range I saw the neat and useful *Anemone sylvestris*, fl.-pl., bearing a number of perfectly double white flowers like a Persian *Ranunculus*, which promises to be a useful plant for cutting purposes. Next it were plants of the "Prophet-flower," *Arnebia echinoides*, or *Lithospermum erectum*, a free-flowering and useful plant. A very novel plant from Turkestan is *Incarvillea Delavayi*, said to be quite hardy; it has foliage not unlike that of *Bignonia radicans*, and flowers like those of a *Nægelia*, of a rich reddish-purple, which varies greatly by culture.

In the same house, were many tufts of a pretty variegated grass named *Arrhenatherum bulbosum*, which may be useful as an edging plant, as it is neat and pretty. *Experience.*

THE CENTENARY OF THE ROYAL HORTICULTURAL SOCIETY.

IN the discussion that has arisen in consequence of the Council of the Royal Horticultural Society having decided to recommend to the Fellows of the Society the desirability of celebrating the centenary of the society by relinquishing Chiswick, there seems to me a danger of there appearing to be a want of sympathy with the Council in the general work and management of the society's business by those who cannot see "eye to eye" with them in their recommendation in this particular instance. As one opposed to the views of the Council in this matter, no one could deplore more sincerely than I should that anything which may have been said or suggested should in any way be construed or interpreted as a reflection on the Council. I speak with knowledge when I say that every member of the Council is inspired only by the feeling and desire how best to serve the interests of the society.

When the history of the Royal Horticultural Society comes to be written years hence, no name having been associated with it during its long life will shine more brightly as having been its best friend and servant than that of Sir Trevor Lawrence. It cannot be too well and widely known amongst gardeners that when Sir Trevor succeeded to the Presidency, the society, in consequence of a variety of causes, was apparently on its last legs, and to him is chiefly due the credit for the splendid position as regards popularity and the state of its finances which it occupies at the present time. Neither ought it to be forgotten that the Rev. W. Wilks, the energetic secretary, has been associated with Sir Trevor in the building up of the prosperity of the society; and that for many years, whilst the finances were in low water, he gave gratuitously but ungrudgingly and cheerfully his best services to the society. Having lately stated my opinions on the undesirability of the council launching out on a scheme of a new garden in an inaccessible part of the country where no one is ever likely to go and see it, excepting members of the council and committees occasionally, I need say little. With all due respect to the opinions of many writers who say that this fifty acres of rough arable land can be bought and converted into a garden worthy to represent the best aspects and interests of British horticulture for the matter of about £10,000, all I can say is, that from my long experience in similar work, that you could not even lay the foundations of the garden for this sum, let alone the superstructure and completion of the same; and it must be remembered that the first expense will not be the greatest, as this garden, if it is ever formed, will entail a charge of not less than £3000 per annum on the revenue of the society for all time, with comparatively little or no return in income.

If it could be shown that the Council were proposing to undertake some original or new development in horticulture likely to benefit the industry, either practically or scientifically, one could understand the anxiety apparent for a new garden. Let the Royal Horticultural Society spend what money it may on a new garden, it is hopeless for it to hope

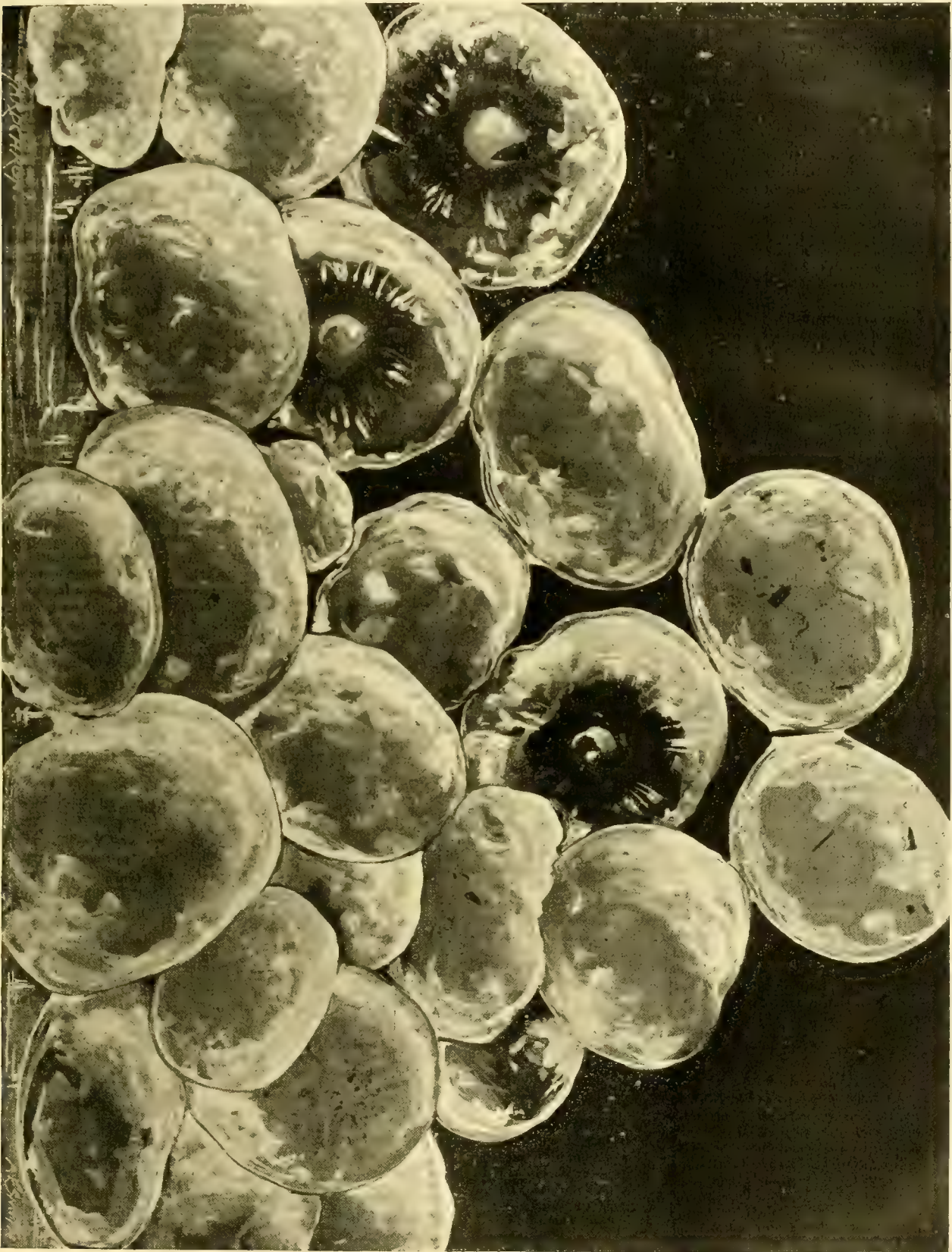


FIG. 5.—HAILSTONES (NATURAL SIZE) WHICH FELL AT ABINGDON ON JUNE 12. (SEE P. 26.)

to attain to the perfection in any branch of horticulture that is not already existent in our best private and commercial establishments throughout the kingdom, most of which, I think I may venture to say, are at the service of the society to show to any foreign or other friends interested in gardening.

The Royal Agricultural Society of England does not spend its energies and income in trying to teach British farmers the art and practice of husbandry by occupying a farm of their own; but it does so in a far more satisfactory and effective way by encouraging and stimulating agriculturists to greater efforts of perfection by bringing together in large exhibitions, the best produce of the whole country. This is what we should like the Royal Horticultural Society to do for gardening.

The principle of having an expensive garden for the society is played out. It has had its chance and has fallen behind in the race, and it would be about as profitable to "work a dead horse," or to "plough the sands of the sea shore," as to think of establishing another.

I have already said that the condition of the Society was at a low ebb when Sir Trevor Lawrence accepted the Presidency. What policy under his guidance did the Council then adopt which has brought about such happy results in the present success of the society? Surely no one will say that Chiswick can lay claim to having helped to bring about this marked success. To what then is it due? I respectfully say that in my opinion it is due almost entirely to the Policy of the Council in establishing the fortnightly and Temple shows in the heart of London.

If then it be conceded that our success, both in the number of Fellows, and in the greater and wider influence the society is now exercising on behalf of Horticulture is due to this cause, may it not be pertinently asked: Why do we not nourish and make much of this "nest egg"—"this goose that lays the golden eggs"—by making a cordial and unanimous effort to secure a proper hall of horticulture in London? It would cost little more than the garden, and instead of being afterwards a drag on the resources of the society in the way of outgoings, as the garden would do, it is not too much to say that a handsome income would result from the services which the hall might be put to; and without particularising further, it would be no hardship for the society to follow the example of the Royal Agricultural Society, by charging the trade for exhibits therein for advertising purposes; this in itself would bring in a considerable revenue.

The Drill Hall has always been considered a make-shift, and was never intended to be a permanent home of the society. Moreover, in view of the greater amount of time and attention likely to be given to military training in the future, we may any day find ourselves minus a home, as I understand we are only tenants at will.

It is acknowledged freely that there are at least two difficult problems to solve, before the course is open to the erection of a hall. The first is the necessary funds, and the second is where to find an eligible site.

If the funds are forthcoming in sufficient volume, the second would, I hope, not prove so formidable, as there must be plenty of poor tenements around Westminster, which could be bought and pulled down to make room for the hall. If it is a fact as stated by some correspondents, that £27,000 was promised some years ago for this purpose, when the society was not by any means so popular as it is to-day, then it is not too sanguine a view to take that a like amount and probably much more would be forthcoming now. O. T. F.

[The tendency now is to belittle Chiswick, but the conferences held there have been most serviceable to horticulture; and as we have the lease for another twenty years, we ought to make the best of it. We shall never again get such a garden at such a price, and if more encouragement and direction were given, it might be rendered more valuable than it now is. ED.]

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Oncidium phaeolatum is a plant that soon deteriorates in health whenever the potting material becomes dense and close from age and decay, and immense quantities of new roots form soon after the old is replaced with new material. Specimens may now be broken up and re-made, using well-drained pans and a mixture of equal parts of peat and sphagnum-moss. The plant grows well in a moderately light position in the warm-house, but a few degrees less heat, and a freer circulation of air than is usually obtainable there, induces a more robust growth and stronger flower-spikes. Water is needed copiously during the growing season, but only sufficient to keep the pseudo-bulbs in a sound state is required when they have matured.

Bolleas, Pescatoreas, Promeneas, &c.—These, with other allied forms, are botanically classed as Zygopetalums, but from a gardener's point of view, they are quite distinct from them. Being difficult to import, and irrationally treated when they do arrive, good healthy plants are seldom met with. Members of the first two genera may be treated alike, although the individual species hail from different localities and altitudes. They should be planted in baskets or pans with numerous perforations, and almost filled with drainage, surfacing up to the base of the new growth with peat and sphagnum-moss mixed in equal proportions. Select a moderately shaded spot in a warm-house, having an equable temperature all the year round. Stand the receptacles on inverted pots placed on a stage well covered with moisture-holding material, from which evaporation is rapid. Here, when the plants are rooting, water may be applied overhead almost daily; but during the winter, atmospheric moisture and an occasional watering will suffice to keep them in health. Preferably the spring time is the most suitable for overhauling the plants, but any in an unhealthy state may be taken in hand at the present season, and owing to less care in watering being needed now, they will probably repay any attention bestowed upon them. Imported plants may be inserted in crocks alone, and moistened freely until new growth appears, when new material should be placed at the base, and the plants treated as above described. *Promeneas stapelioides* and *P. xanthina* are totally distinct from any of the above, and require different treatment. They are small, dwarf-growing species, very liable to damp off in an over-saturated atmosphere. They are now making new growths, and it is the best time to repot or give fresh rooting material where required. Plant in small, well-drained pans that may be suspended, introducing a little turf-fibre with the peat and sphagnum-moss, and afford a modicum of sand. Suspend the plants above the *Masdevallias*, and afford water sparingly until established, and even then great care is needed, so as to apply no more than will keep the materials moist. Overhead watering should not be adopted with these plants. On the completion of the growth of their tiny pseudo-bulbs, rest should be brought about by applying water only when these shrivel greatly. Trips must be kept in check, or irreparable damage to the young growths will follow. *Bateanias*, of which there is but one true species, viz., *B. Colleyi*, requires the same kind of treatment as *Bolleas*, but a shady spot in the *Cattleya*-house will prove more suitable for it. The above, like *Colax jugosus*, is difficult to grow generally, but with care in keeping the young growths freed from water, wherever evaporation is not rapid, little trouble should be experienced. The last-named generally thrive best when grown with the *Masdevallias*.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Work in General.—The present wet season has spared the gardener much labour, much less water being required by plants freshly set out, and for the same reason it has greatly assisted in the spread and growth of weeds of all sorts, and hindered the use of the hoe in killing them. The earlier crops have, owing to lack of sunshine, taken a longer time than usual to mature, and at the present there is every prospect of seedlings raised from late sowings having to remain longer than is good for them in

the seed-beds. In this district the early crop of Peas will hold good for at least another week, whereas in ordinary summers the ground has been already cleared of them, manured, dug, and re-occupied. This shows the necessity of having the soil of the seed-beds in good heart, and the advisability of thin sowing. It will be important in such seasons as this to clear off the early Peas as soon as the produce becomes the least degree old. Any of the Broccolis, Brussels Sprouts, &c., not yet transplanted, will do well to follow the early Peas or early Strawberries. It is not good for plants of the same natural order to occupy the same spot in the garden for a number of years in succession, as the plants seldom do well. Where a good stock of manure is in a fit state for applying to the land, it may be employed for any kind of vegetable which occupies the land the greater part of the winter and spring, these thriving best where recent applications of manure has been made. Soils which were well cultivated, unless planted with the most gross-feeding vegetables, only need a moderate sprinkling of slaked lime, which should not be used if the staple naturally contains much lime; soot or wood-ashes are preferable in this case. All of these substances destroy the much dreaded wire-worm, and help in preventing clubbing of the roots in Brassicas.

Spring Cabbages.—There is hardly a garden, however small, which does not grow these Cabbages more or less, and no doubt most growers sow for this crop at a fixed date, which has been found to suit the soil and locality. I find it advisable to make two, and even three, sowings, so that if one does not succeed, I have another upon which to fall back. The first sowing should be made about the 17th of this month, and others may be made at intervals of a fortnight. The seed-beds should be rather light, and be situated on moderately rich soil, quick growth being very desirable. A heavy soil should receive a dressing of road-grit, mixed with rather fine mould, or well incorporated with the staple. Let the position of the beds be an open one, and broadcast the seeds, covering them with finely-sifted soil, and put nets over the beds forthwith. Unless rain fall, water should be afforded daily till the plants are well above the soil. Of the many good varieties now in commerce I may mention Ellam's Early, Sutton's Earliest, and Mein's No. 1, which never fail to give good results. The last two are especially adapted for cold districts.

Turnips.—It is time that preparations were made for sowing for the last crops. The first sowing should be made at about the middle of the month, and others at intervals of two or three weeks till the first week in September. I prefer to make small and frequent sowings, smaller roots being superior in flavour to large ones, and they keep when stored much better than those. The position of the beds in the present month should be cool, and the land should have been recently manured, so that the plants may have nutriment close at hand if dry weather occur. The August sowing requires land in good heart; and the plants soon bolt or become a prey to the Turnip-flea, if the land gets in a dry condition. The Turnip, when growing in well-drained land, is not damaged by a few degrees of frost, and in mild winters the roots may be left in the ground till the spring, when excellent "tops" may be taken from them. Before sowing, let soot, wood-ashes, or slaked lime, be applied as a top-dressing. Of varieties to sow, take Veitch's Red Globe, a good keeper; Yellow Perfection, and Chirk Castle Blackstone, the last two invaluable for producing tops. Let the seed-drills be drawn 15 inches apart, and nearly 2 inches deep.

Scorzonera and Salsify.—The plants from the sowing made in May should now be thinned to a distance of 9 inches apart. This sowing is not liable to run to seed like the first one. Some gardeners have a difficulty in obtaining shapely roots, but given a top-dressing from spent Mushroom-bed manure, and occasionally liquid-manure, the plants rarely fail to grow well.

Herbs.—Those in demand in the winter should now be cut; Mint especially requires early gathering. All kinds of pot herbs keep better if cut on a hot day, and laid out loosely on a shelf in a vinery, partially shading them from the sun. Parsley may also be dried, but unless afterwards placed in bottles and kept air-tight it soon loses its colour and flavour. When dried, tie in small bundles, and hang in a cool airy storeroom.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park New Bazaar.

The Layering of Strawberries.—Owing to the recent wet weather, opportunities have been afforded the gardener for washing and filling with soil the necessary number of small 60's, for layering Strawberries, and cutting books, &c. The work may now be pushed on with vigour. If beds of vigorous one and two-year-old plants are not grown for the purpose of supplying runners, these must be found on the fruiting plants, a beginning being made with the earlier varieties. Strong, healthy runners may always be obtained from vigorous young plants, which if afforded proper attention afterwards make strong plants by the end of the autumn season. The layering-pots should be placed down the middle of each alternate alley, plunging them in the earth up to the rims, if time will admit of this being done. By arranging the pots in this manner, the alleys on either side are left unencumbered for the men to pass along in attending to the plants. Take the strongest runners, nipping off the runner in front, and fasten with a peg or a stone. During dry weather apply water daily, or as often as is necessary. When the runners are rooted, let them be severed from the parent plants, and then remove to a somewhat shady spot for a week or ten days.

Planting.—If the situation of the new beds and borders is decided upon, let the soil be trodden evenly over the entire area, and rake it smooth and level. Some gardeners plant Strawberries on land that has carried a crop of early Potatoes, when nothing further in the way of preparation is needed than that mentioned. In the case of land not yet prepared for planting, it should be seen to without delay. Unless the land is in very good heart, plenty of well-rotted manure should be afforded, together with a dressing of heavy loam if the land be of a light nature, and then dig it deeply or bastard-trench it. Strawberries of the British Queen strain require very good cultivation to bring out their good qualities; a fact to be borne in mind if such are planted.

Varieties.—Royal Sovereign is extensively grown as an early Strawberry, and until superseded by a better one, it will retain its place. Sir J. Paxton, an immense cropper, forms a good succession; Gunton Park is an excellent Strawberry, and a good cropper, the colour of the berries a dark crimson. President is an excellent old variety, and Waterloo deserves to be grown where it succeeds, as its dark Mulberry-coloured fruits are appreciated by some persons. Latest-of-All and Oxonian, two excellent late varieties, should be planted at the foot of north walls for affording late fruits for dessert. Where the soil is suitable, British Queen and Dr. Hogg may be grown. La Grosse Sucrée is a first-rate early variety, and it should not be omitted when the land suits it; while Vicomtesse Héricart de Thury or Garibaldi yield an abundant crop of richly flavoured fruits of moderate size, good for jam and preserving whole. If a brighter coloured preserve is required, Grove End Scarlet or Stirling Castle are excellent varieties for this purpose. St. Joseph should find a place in every garden.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

Chrysanthemums.—The plants in pots being now established, should be arranged together, and secured to stakes in the place they will occupy till the end of the month of September. Japanese and incurved for producing large blooms may require only one stake, which should be 6 feet high and of due strength. These stakes should be inserted in the soil about 2 inches from the stem, and pressed down until the drainage is reached, and a little practice will enable workmen to fix the stick perpendicularly. In tying, allowance should be made for growth. Let the surface of the soil be occasionally stirred with a pointed stick. If space permit, the plants may stand in single rows on a bed of coal-ashes at 18 inches from pot to pot, water being adjacent. In order to keep staked plants steady, wires may be stretched along the row and attached to posts, and to this the stakes in the pots may be fastened with tarred string. If properly staked one wire is sufficient to hold the plants in position. Affording water is an important matter in Chrysanthemum cultivation, an examination being required three times a day in hot weather. The plants should be well syringed morning and evening in sunny weather. No manures should be applied at present.

Cape Pityranium.—Those plants which have ceased to flower may be stood out-of-doors, and be kept rather dry until the shoots ripen. Cuttings taken now of half-ripened shoots root readily in a bed of sandy soil. The final potting of all winter-flowering plants, viz., Linum, fibrous-rooted Begonia, Eupatorium, Gesneria, Genista, Grevillea, &c., should be finished soon. Cyclamens should be syringed early in the afternoon, and the sashes closed with sun-heat, air being admitted in the evening. Cinerarias for early flowering should be potted in loam, and stood in a cool place out of the sun, as in the shadow of big trees at a distance away, sashes being dispensed with excepting during storms and heavy showers of rain. Cinerarias should be grown on without a check. Sow seeds for supplying plants for blooming in the spring; sow also Mignonette for winter flowering in 5-inch and 6-inch pots, that are well-drained, and filled with a turfy loam three-quarters, and dry cow-dung one-quarter, mixed with road-grit and fine rubble; make it firm, and apply water to the soil before sowing the seeds. Plunge the seed-pots in coal-ashes; apply shade till the seeds come up, and thin the plants as soon as they are fit to be handled. Tree Mignonettes may receive the final repotting, allowing, if they are strong and healthy, 9-inch or 10-inch pots. Stake out the leading shoots, and pinch off all flower-spikes as they show, syringing the plants morning and evening, and affording air at all times of the day.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Ilchester, Abbotsbury Castle, Dorsetshire.

Pinks.—A border in a protected part of the garden should now be prepared for striking cuttings of Pinks. First let a rich, sandy compost, to which powdered charcoal or soot have been added, be dug into the soil; and then, having dug and levelled the border, make it firm and rake the surface smooth, removing stones, &c. In choosing the cuttings, take those which are found about the base of the flower-stalks, taking them with a heel; and smooth the ragged part, which is all that is requisite, then dibble them into the soil at 3 inches apart. Apply water copiously, so as to settle the soil about the cuttings, and occasionally sprinkle them afterwards with a fine rose watering-can. When there are signs of growth, transplant them to a prepared bed in which some stiff loam has been dug, or grow them in groups in the borders with similar preparations.

Carnations.—Preparations should now be made for layering the plants, the weather being all which could be desired for the purpose. A commencement should be made by lightly forking up the soil round about the plants, and making the flattish mounds beneath the shoots to be layered. This soil should be sifted through a $\frac{1}{2}$ -inch meshed sieve, and should consist of equal parts of loam, leaf-mould, rotten dung, and road-grit or coarse sand, with a sprinkling of fresh soot. The shoots to be layered should be strong, not too succulent, and convenient for being brought down to the soil; and from these a few of the lower leaves should be stripped, and an incision made half-way through at a joint some 6 inches from the top. Having done this, turn the blade in an upward direction, and cut upward for about a space of $1\frac{1}{2}$ to 2 inches, according to the strength of the shoot. For fixing the layers in the soil use stiffish pegs of Bracken or Birch, holding the layer steady meanwhile, and erect; hollow out the soil a little, bend down the layer, and insert the peg; then fill in with the sifted soil, pressing it round the layer. Some gardeners tip the grass, others do not. Apply water forthwith, and whenever required during hot weather. The layers will be rooted in six weeks, when they may be severed from the old plants, and set out in prepared beds or stations, or in unfavourable districts potted up for storing in frames through the winter.

Bedding Plants.—The recent heavy rainfall has been destructive of the first blossoms in the flower-beds, and these should be removed before decay sets in; removing all leaves which have turned brown, and any accumulation of rubbish between the plants. Healthy growth and less damage by slugs are the benefits derived from doing this useful kind of work. Celosias, Fuchsias, and Abutilons planted in beds in exposed positions will stand in need of supports. The plumes of Celosia pyramidalis are often taken by the sparrows for nesting purposes, and to obviate this, let some strong black or brown threads be twined around the plumes or over the beds.

Yuccas.—The cuttings inserted in prepared borders, as advised in an earlier Calendar, will now be making roots, and on some of them flower-shoots will appear from the larger ones, which should be removed with a slanting cut level with the leaves, and thus favour the growth of side-shoots. Established plants are flowering well at this place, and require strong stakes to support them, reaching to within a foot of the top of the spike. The ties should allow for the sway of the spikes, so as to prevent chafing the rind. Immediately after flowering is over, cut off the spike, and by so doing give strength to the side-shoots, which in turn will flower in one, two, and three years, according to strength. In the case of Yuccas possessing many branches, some of them are sure to flower yearly. If afforded during the period of flowering, weak liquid-manure is of great use in imparting vigour to the plants at a time of great strain.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Figs.—When the second crop of fruits on the early pot trees is consumed, the trees should be cleansed and insects destroyed, in order that the foliage may keep in a healthy condition, and that a renewal of activity at the roots may be induced before repotting or top-dressing are carried out. The sooner the latter operation is performed the better for the trees. Trees which have out-grown their pots should be repotted, using pots that are two sizes larger than those they are standing in; let the drainage be good, and as a potting soil make use of rough turfy loam three-quarters, well-rotted dung one-quarter, together with a liberal addition of old plaster and wood-ashes, or charred earth. The same kind of compost will answer when top-dressing. When the latter operation is performed, the exhausted soil should be extracted down by the sides of the ball, and the drainage, if defective, should be made good. After a repotting, Fig-trees should be afforded genial treatment for a week or two, or until activity at the root has taken place, when the plants should be gradually hardened off, and afterwards be stood in a sunny position out-of-doors. Let the plants be maintained in a moderately moist condition at the root, and be syringed occasionally in hot weather.

Melons.—If fruits are liked late in the autumn, and there exists a small forcing house provided with sufficient top and bottom-heat, Melon-seeds may still be sown. Wherever the seed-pots are placed, they must be kept close to the roof-glass directly the seeds have germinated. The best place is a frame or pit having a bottom-heat of 80°, in which case the plants will be close to the glass all the time they remain therein. A bed of fermenting materials should be prepared 3 feet deep, on which a bed, 1 foot thick, of turfy-loam, mixed with a small quantity of bone-meal and soot, should be laid. A temperature of about 75° by night, and 85° by day should be maintained, and the growths trained thinly, every alternate lateral being stopped at the first leaf. By this method good substance in the foliage will be ensured, which will enable it to continue in vigour till the fruits ripen.

Cucumbers.—Plants may now be planted as a succession to those which have been fruiting throughout the early summer months. These plants will bear late into the autumn, and spare the winter Cucumber-plants, which need be cropped only very lightly, so long as the plants from this sowing remain in bearing. Former directions given as to making the Cucumber-bed, top-dressing the hillocks, &c., should receive attention. The aim of the gardener should be to grow plants of good strength from the seed stage upwards, to prevent red-spider attacking them; and to syringe them freely night and morning.

Tomatos.—A fresh planting and another sowing of seed, may take place at this date. In order to grow winter Tomatos to perfection, a house with a due south aspect, and having a roof with sharp pitch, should be chosen. The plants should be kept for a short space of time in the seed-pots, or in the small pots in which they are potted, as to do this causes weakness in the plants and hinders growth. The plants succeed as cordons, all lateral growths being pinched out as fast as they appear. A suitable sort of soil would consist of turfy-loam, mortar rubble, bone meal, and charred earth. Let the house be ventilated freely by night and day in fine dry weather, and in damp, dull weather, keep the interior dry, and employ artificial heat.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JULY 14	Rose and Horticultural Shows at Manchester and New Brighton.
TUESDAY, JULY 17	Royal Horticultural Society's Committee. Carlisle Rose Show. Paris Exhibition (temporary Show).
WEDNESDAY, JULY 18	Cardiff Horticultural Show (2 days).
THURSDAY, JULY 19	National Rose Society's Exhibition at Birmingham.
FRIDAY, JULY 20	Bicentenary Exhibition of Sweet Peas, at the Crystal Palace.
SATURDAY, JULY 21	Rose Show at Newton Mearns.

SALE.

FRIDAY, JULY 20.—Imported and Established Orchids at Protheroe and Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—63° 4'.

ACTUAL TEMPERATURES:—

LONDON.—July 11 (6 P.M.): Max. 86°; Min. 63°.

July 12: Fine, hot.

PROVINCES.—July 11 (6 P.M.): Max. 77°, S.E. Counties; Min., 59°, Shetland.

Now that Sweet Peas are so much in favour that they are to have a "Conference" all to themselves, it may be well to give a slight sketch of their history as cultivated plants. In the first place, their native place is Sicily and the adjacent mainland near Naples. By some confusion, Ceylon has also been mentioned as the native country of the Sweet Pea, but this is probably a mistake, as neither TRIMEN nor any other of the modern authorities mention it as a native of Ceylon; and we shall presently indicate how this error may possibly have originated.

The original mention of the plant was in 1696 by a reverend monk, one Father CUPANI, who published at Naples a *Hortus Catholicus*, in which is described our plant as follows:—"Lathyrus distoplatyphyllus hirsutus mollis magno et peramæno flore odoro." This was before the advent of LINNÆUS' binominal system, and we commend the name or descriptive phrase rather to our Orchidic friends and others, who seem disposed to revert to the ancient practices. There are some, too, among the purists who would revive the name *distoplatyphyllus* as the oldest specific name. For our own parts we prefer to adhere to the Paris Convention, and to call the plant by LINNÆUS' name *Lathyrus odoratus*—in English, Sweet Pea. But we are anticipating. The earliest notice, as we have said is that of CUPANI. That learned monk sent seeds of it in 1699 to COMMELYN of Amsterdam, who sowed the seeds and gathered flowers in the

same year. He, of course, adopts CUPANI's name, and gives in his *Rariorum Plantarum Med.* a good figure (1701), in a folio plate. The most remarkable feature in this representation is the way in which the wing petals spread laterally. This would be thought almost criminal now-a-days, when the object is to get as circular and even an outline as possible, and to convert what Nature meant to be irregular, into a regular form. In modern botanical jargon, a Sweet Pea, or any other Pea for that matter, is classed as "zygomorphic," or irregular; the aim of the florist is to make it "actinomorphic," or regular.

We cannot trace anything more about the Sweet Pea till 1713, when it is mentioned by JAMES PETIVER in the *Philosophical Transactions* in a paper entitled "*Botanicum hortense III.*," giving an account of divers rare plants observed this summer, A.D., 1713, in several curious gardens about London, and particularly the Society of Apothecaries Physick Garden at Chelsea," a garden which had at the time close relations with the Dutch gardens at Leyden and Amsterdam.

PETIVER calls the plant *Lathyrus sculus*, citing BOERHAAVE'S *Index plantarum Acad. Lugd. Bat.* (Leyden). The great Dutch naturalist, it may be said, considered his plant identical with CUPANI'S *L. distoplatyphyllus*. PETIVER described the plants as coming from Sicily, and having large, broad, sweet smelling flowers with a red standard (vexillum), and blue wing-petals, or as he calls them (petalis labialibus) wrapping round the "rostrum" or young ovary. "This elegant sweet-flowered plant," continues PETIVER, "I first observed with Dr. PLUKENET in Dr. UVEDALE'S most curious garden at Enfield, and since at Chelsea and elsewhere." Neither GERARD nor PARKINSON mentions the plant, which must have been introduced after their time.

PLUKENET in his *Almagestum* (1720), p. 114, refers to the plant in the same terms as PETIVER, citing CUPANI'S *L. distoplatyphyllus* as a synonym, but with some hesitation.

In 1730 the purple Sweet Pea was figured in a coloured plate, representing the flowers of June, published by ROBERT FURBER, of which a copy is in our possession. The flowers are much smaller than those we are now accustomed to see.

In 1737 BURMANN published his *Thesaurus Zeylanicus*, wherein he mentions "*Lathyrus Zeylanicus odorato flore amæno ex albo et rubro vario*," which, he says, only differs in the colour of the flowers from CUPANI'S plant. Here, then, is the first mention of the plant in connection with Ceylon. BURMANN did not himself visit the island, but got his specimens from collectors.

In BURMANN'S long-winded Latin preface, it is stated that HARTOG sent Ceylon plants (seeds, probably) to CORNELIUS VOSS, a nurseryman at Amsterdam. May it not have been that Voss had seeds of the Sweet Pea from Sicily also, and that by some accident they were mixed with Ceylon seeds, and hence BURMANN may have been misled. At any rate, we can form no other hypothesis, and have no other clue whatever.

It is not necessary to cite other of the old authors, as they simply copy from one another, and add nothing to the stock of information.

LINNÆUS, however, must be mentioned, as our nomenclature dates from him; indeed, originated with him. In the *Species Plantarum* (1753), our plant is called *L. odoratus*. Ac-

cording to some purists, LINNÆUS should have called his plant *L. distoplatyphyllus*. We are glad he did not, though we have no less respect for CUPANI than if we were to adopt his name.

LINNÆUS makes two varieties— α , *sculus*, and β , *zeylanicus*, of BURMANN.

In the Natural History Museum, where by the courtesy of the authorities we gleaned these details, are specimens in SLOANE'S Herbarium, H. S. 88, fol. 53, labelled by PLUKENET, and others from MILLER, derived from the Chelsea Botanic Garden about 1740.

MILLER (1768) in the eighth edition of his *Gardeners' Dictionary* adopts the Linnæan nomenclature, and mentions three varieties, one, the original, with dark purple standards and blue wings; another, with a pink standard and white keel, with the wings of a pale bluish colour—this is commonly called the Painted Lady Pea; and thirdly, a form in which the flowers are all white.

AITON in his *Hortus Kewensis*, iii. (1789), refers to CURTIS' *Botanical Magazine*, t. 60, and also adopts a *sculus* with purple standard, and β *zeylanicus* with parti-coloured flowers (the Painted Lady).

How many varieties there are now-a-days we do not care to count. The object now-a-days is, as we have said, to get a large, nearly circular flower with a bold standard, and much variety of colour. In addition to this, changes in habit have been induced, and a race of dwarf forms introduced from America. All these variations have been effected, not by hybridisation between distinct species, but by cross-breeding and selection from one. The range of variation, considerable though it is, is thus confined within the limitations of a single species.

It would seem, then, that the plant was introduced from Sicily to Holland, and thence to England.

What Mr. Eckford and his followers have done for it may be seen on comparing the figures of a century ago with the flowers now produced.

THE Crystal Palace on Saturday
last was once again the scene of a great Rose show, when the supporters of the National Rose Society exhibited there the choicest blooms that the present season has afforded them. As Rose seasons succeed each other, we are apt to complain of each one, because it is not an average year that is looked for, and wished for, but a perfect one, which seldom or never happens. The weather during the present season has already been described sufficiently, and it has been less agreeable than Rose-growers had hoped for. But it has certainly not destroyed the Rose season, nor did it very seriously affect the National Society's exhibition.

We know that there were some growers at the Palace on Saturday who formed a rather low estimate of the show, but the weather and the gossip previously had led them to expect such a show, and possibly they found it difficult to think otherwise.

At any rate, our detailed report in another column goes very far to prove that in quantity of blooms at least, it was not much below average, if any. Take, for instance, the first two classes in the nurserymen's section. In the first class for seventy-two blooms, there were six exhibitors; and in that for forty trebles, five exhibitors; making 1,032 blooms in the two classes, which is exactly the number staged last year, but is forty-eight fewer than in 1898. In some smaller classes, there were more exhibits than last year, and in others, fewer.

Roses at the Crystal Palace.

But it is worth remark that in one class for twelve blooms, and confined to amateurs, there were as many as eighteen collections staged.

In regard to quality, the flowers were not lacking greatly in size or substance. Perhaps they failed most from the point of view of refinement. The weather having been cool, the flowers had not been hurried, and had not the flimsy, short-petalled appearance they have in very dry, hot weather. But they have not escaped the disfiguration that wind and rain cause, and some of the finest buds were injured before a petal had expanded. Thus there were blooms staged with grand centres, of good size, and with the outermost petals storm-marked. But there were good specimens found for each of the six Medals, and it is interesting each year to note the particular varieties that are adjudged to be the best in the show.

That ever popular variety Mrs. John Laing, which has so frequently proved a Medal Rose, has failed this year. It would therefore seem that certain conditions of the season of 1900 have not particularly well suited this excellent Rose. The hybrid perpetuals that gained Medals were Susanne-Marie Rodocanachi, shown by Messrs. DICKSON; and Ulrich Brunner, shown by Mr. COOK, and grown but a little distance from London. The Hybrid Teas were Mrs. W. J. Grant, shown by Mr. BEWLAY, Ireland; and Mildred Grant, from Mr. W. TAYLER, Hampton. The best Teas or Noisettes were Muriel Grahame, from Mr. BEWLAY; and Bridesmaid, from Mr. GEO. PRINCE.

Of exhibitors, we have to congratulate Mr. E. B. LINDSELL, who again won the Amateur's Challenge Trophy, being the ninth time in the past twelve years. The next class for twenty-four blooms, from which Mr. LINDSELL and other champions were excluded, was won by Mr. ORPEN, of Colchester.

In the nurserymen's classes, Messrs. ALEX. DICKSON & SONS, of Newtownards, beat all comers in several of the most important classes, and one of the judges remarked that in the case of the class for seventy-two blooms, there was not occasion this year to adopt "point" judging, which is unusual. Not only were the two biggest classes won by Messrs. DICKSON, but the 1st prize for forty-eight blooms distinct has also gone to the Emerald Isle, to Mr. HUGH DICKSON, of Belfast. The Colchester growers have consequently been less victorious than usual.

The Society's Gold Medal offered for a seedling Rose that may be adjudged worthy of such a distinction, has not been awarded this year at Salisbury, or at the Crystal Palace.

The whole of the exhibits were staged in the nave, and during the afternoon there was a crush of visitors that quite thronged the paths.

The Rev. H. H. D'OMBRAIN was present at the exhibition, and Mr. ED. MAWLEY, to whose courtesies we are all indebted, superintended the arrangements.

Since the exhibition was held, the weather has become unexpectedly hot. What influence will the changed conditions have upon the Society's Northern show to be held at Birmingham next Thursday?

ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Flower Show of the Royal Horticultural Society will be held on Tuesday, July 17, in the Drill Hall, Buckingham Gate (late James Street), Westminster, from 1 to 5 P.M. A lecture on "Lilies" will be given by Mr. R. WALLACE at 3 o'clock.

THE OLD DEER PARK, KEW.—Sir JOSEPH HOOKER has addressed the following letter to the *Times*:—"Sir, — For several years after the appointment, in 1841, of my father, the late Sir WILLIAM JACKSON HOOKER, as Director of the Royal Gardens, Kew, the control of the Deer Park was included in that office. At that time—and, indeed, till the date of his lamented death—His Royal Highness the PRINCE CONSORT took a personal interest in the condition of both the Garden and the Deer Park, paying not unfrequent visits to both; and I well remember after one such visit, when the subject of utilising the Deer Park had been under consideration, my father telling me that he had been greatly relieved by His Royal Highness having assured him that it was never to be built upon. I may add that on a recent later occasion I received the same assurance from Mr. REDGRAVES, then Secretary to the Office of Woods and Forests. It need hardly be pointed out that the erection of the National Physical Laboratory in the Deer Park would be the thin end of the wedge. Any such laboratory would, I hope, in the interests of science, require in future indefinite extension; and buildings for one national object may be expected to be followed by others, to the destruction of the amenities of the Deer Park and of the Royal Gardens, Kew. JOS. D. HOOKER, Late Director, Royal Gardens, Kew."

"ILLUSTRATIONS OF THE ROYAL BOTANIC GARDENS, KEW," from Photographs taken by permission.—By E. J. WALLIS (EFFINGHAM WILSON, 11, Royal Exchange, E.C.) This publication has the advantage of being published with an introductory note by Sir W. T. THISLTON-DYER, which concludes with these words:—"Mr. E. J. WALLIS has succeeded with admirable skill in photographing the most interesting and striking features of the establishment. Believing that many of those who come to Kew would wish to preserve some memorial of their visit, he has had a well chosen selection of his views reproduced. Of each of these I have willingly written a few words of description." The album is consequently superior to the average book of views obtainable at "show" places. The photographs have reproduced well, and many of them are really charming pictures of favourite spots. From an artistic point of view, the photographs taken in the pleasure-grounds and arboretum are, naturally, the most pleasing views of the interior of the houses and of the rockery, including too many details in the foreground to be so effective. It may be suggested, with a view to future editions of this book, that an index or numbered list of the plates would assist those in search of any one particular picture. With this exception, the publication leaves nothing to be desired.

THE MIDLAND CARNATION AND PICOTEE SOCIETY.—The Committee Meeting of the above Society, held on July 5, fixed the dates of the next exhibition, on account of the lateness of the season, for Thursday and Friday, August 9 and 10.

AMSTERDAM.—The Netherlands' Chrysanthemum Club intend to hold, from November 8 to 12, an exhibition of Chrysanthemums in the salons of the Royal Society, "Natura Artis Magistra." The schedule is divided into three parts, viz., 1, exhibits from professional gardeners; 2, cut flowers and specimens of the florist's art; 3, exhibits from amateurs.

FÖRSTBOTANISCHES MERKBUCH.—We learn from the *Garten Flora*, July 1, that the Minister of Agriculture, Domains, and Forests of the German Empire, has caused to be published a list of the more ancient and remarkable trees and shrubs in the kingdom of Prussia worthy of being preserved. The first issue embraces the province of West Prussia, and is furnished with twenty-two illustrations. The work is under the editorship of Dr. CONWENTZ, Director of the West Prussian Museum at Dantzig. The publishers are the BROTHERS BORNTRÄGER, Berlin.

M. DE LA DEVANSAYE.—We are glad to learn that M. DE LA DEVANSAYE has been honoured by the Emperor of RUSSIA with the order of Chevalier of the Order of Saint Anne for his successful work in horticulture. We tender our hearty congratulations.

CIDER CONGRESS IN PARIS.—It is proposed to hold, from October 11 to 13, in connection with the exhibition, a congress in Paris devoted to the cider-making industry. The questions proposed on the programme for discussion refer to the raising and planting of cider Apples and Pear-trees; the uses of manures for them; the varieties of Apples and Pears best adapted for certain localities; the insect pests and diseases of the trees; drying and preserving the fruits; experimental orchards; instruction in Apple-culture and allied subjects; extraction, filtration, and sterilisation of the musts; uses of yeast; the making of bottled cider; storing the beverages; Apple spirit; and the Apple and cider trade in France and elsewhere. Those wishing to participate in the conference should apply to the Secretary, M. JOURDAIN, Rue Marget, 21, Paris.

MR. PETER BARR.—We are pleased to find Mr. BARR descanting to the inhabitants of Melbourne on the necessity of instruction in the principles of culture. "In horticulture, as in everything else, a start must be made from a proper basis. . . . Growing must not be a matter of haphazard, without reason or a precise aim, but must be developed from sound principles." It is encouraging to find such doctrine laid down. If we simply do routine work as well as our forefather's did, what chance is there for the development of horticulture?

THE CAMBRIDGE BOTANIC GARDEN.—The annual report of the Botanic Garden Syndicate mentions the large number of plants and of seeds received and sent out by the authorities. Among the more important and interesting of the plants received were *Begonia Hemsleyana*, remarkable as an Old World species, on account of its palmately divided leaves; *B. venosa*, *Cinnamomum zeylanicum*, *Crinum natans*, *Cycas siamensis*, *Encephalartos brachyphyllus*, *Fugosia hakeaefolia*, *Incarvillea variabilis*, *Dianthus Knappi*, the true *Delphinium Staphisagria*, *Lewisia Tweedi*, *Lycopodium dichotomum*, *Meconopsis paniculata*, *Nicotiana sylvestris*, *Salvinia auriculata*, *Lizania latifolia*, and *Kniphofia Tysoni*. The report is entirely satisfactory to those interested in the work of the garden.

CHERRIES.—M. CHARLES BALTET, in the pages of our interesting confrère the *Chronique Horticole*, says that for five or six weeks at this season, May Duke Cherry finds its way into Paris in waggons laden with hundreds of small boxes; while an enormous quantity goes to London, St. Petersburg, and other large towns. In Burgundy the despatch of fruit is astonishing. Hundreds of thousands of francs are obtained from England. These Cherry-trees, which are planted in waste lands, on slopes, or in exhausted vineyards, are grafted on the Sainte Lucie variety. They have no manure, no pruning, no cultivation, and yet they attract a legion of buyers, who buy the crop, pack it on the spot, and despatch it to its destination.

ACALYPHA HISPIDA.—A white-flowered variety of Sander's *Acalypha* is figured in a recent number of the *Deutsche Gärtner Zeitung*.

PEACH CROP IN THE UNITED STATES.—The present prospects of the Peach crop in the U.S.A. are nothing less than phenomenal; almost every important Peach-growing State reports a condition far above the average, and some even above 100. Among the latter are Delaware, Georgia, and North Carolina, whose reports of 106, 110, and 105, are about double their respective ten years' average. Comparing present with average conditions, Virginia reports 46 above; Alabama and Tennessee, each 44 above; Maryland, 41 above; Arkansas and

Kentucky, 36 to 38, and 33 above; New Jersey and Missouri, 28, 22, and 24 above; and Michigan and Kansas, 15 and 12 above. Only California, with a condition of 77, or six points below the average, constitutes any noteworthy exception to the long series of highly favourable reports.

LOTUS SILIQUOSUS.—We are indebted to Mr. C. R. HAIG for specimens of this plant found growing in an artificial chalk hollow in the Isle of Thanet, with little vegetation except *Trifolium minus*. The plant is a native of the Mediterranean region, and how it got into the neighbourhood of Birchington is a mystery. It seems most probable that it was introduced with foreign seeds, but there are, we are informed, no direct indications of such an origin.

THE COMING APPLE CROP IN AMERICA.—We learn from the most recent Government reports that the average condition of the Apple crop is exceptionally favourable. The whole of the fourteen States of the Union having 3,000,000 or upward of Apple-trees in bearing at the last census, report a condition above, and most of them considerably above, their ten-year average. The condition in New York State, 100, is the highest reported from that State in fifteen years, and is twelve points above the average. Kansas also reports twelve points; Pennsylvania, eleven; Maine, ten; Virginia and Michigan, thirteen; North Carolina, twenty-three; Illinois, nine; Missouri, six; Ohio and Indiana, five; Kentucky and Tennessee, four points; and Iowa, one point above their respective ten-year average. Of the remaining States, &c., with all their diversities of soil and climate, all but some half-dozen have the promise of more than an average crop.

POPLAR PLANTED BY PETER THE GREAT.—The *Garten Zeitung* gives a figure of *Populus nigra* in the Imperial Botanic Garden, St. Petersburg. The tree is 106 feet in height, and is said to have been planted by PETER THE GREAT.

MR. THOMAS BURT HAYWOOD, of Woodhatch, Reigate, of BURT, BOULTON & HAYWOOD, Ltd., of Rotherhithe, Cardiff, Newport, Grimsby, West Hartlepool, and Sunderland, timber merchants, who died on May 3 last, aged 73 years, left personality of the net value of £234,814 6s. 7d., and the whole of his estate has been valued at £250,277 17s. 7d. gross. Bequests are chiefly to members of the family.

THE PROPERTY MARKET.—Burton Closes, near Bakewell, Derbyshire, a freehold residential estate of 91 acres, was withdrawn at £24,800; and Hill House, Cold Newton, Leicestershire, and 125 acres, including Lord Morton's fox covert, at £6,000. The last-mentioned property was submitted by order of the Marquis of WINCHESTER. About 35 acres of freehold building land situate at Winchfield, was sold at a price equivalent to £100 per acre. *Times*.

FLOWERS IN SEASON.—Mr. SMITH, of Newry, Ireland, obligingly sends specimens of the subjoined interesting species:—

ASTRANTIA MINOR.—Much less common than *A. major*, and more elegant.

BAPTISIA ALBA.—A Leguminous plant, with trifoliate leaves, and long racemes of white flowers.

CAMPANULA PETRÆA.—With sessile, ovate, lanceolate, dentate, hairy leaves; flowers nearly 2 inches long, with narrow linear sepals, and a deep violet-blue corolla.

CARDUS HETEROPHYLLUS VAR. ALBA.

CORONILLA MONTANA.—Like *C. Emerus*, but with larger foliage, and inflorescence.

DELPHINIUM NUTTALLI.—Spikes of dirty cream-coloured flowers; petals bluish.

ESCALLONIA PTEROCADON, with shining, obovate, deep green leaves, and cylindrical spikes of small white tubular flowers.

HYDRANGÆA ARBOREA.—A shrub with lanceolate bullate glabrous leaves and terminal corymbs of whitish flowers, mostly fertile; a few at the circumference sterile with slender tube, and four-lobed spreading limb of four broadly ovate acute lobes.

IRIS OCHRO-AUREA.—Falls beardless, rich yellow, bordered with a cream-coloured band; standards erect, yellowish, bilobed at the apex, stalked at the base.

PHILADELPHUS FALCONERI, with the leaves and the petals lanceolate, flowers about 1 in. across.

POLEMONIUM PAUCIFLORUM.—An evil-smelling viscid, herbaceous plant, with pinnate leaves; flowers 3 inches long, with a long, slender corolla-tube, expanding into a five-lobed, creamy-yellow limb.

POTENTILLA FREDERICKSENI. Erect shrub, 3 ft. to 4 ft. high, with pinnate leaves, and linear acute leaflets; flowers $\frac{1}{2}$ in. across, pale yellow.

SPIRÆA FOXI.—A foot high, with stalked, oblong, obovate, dentate leaves; and dense heads of whitish flowers like those of *S. Bumalda*, except in colour.

STYRAX JAPONICA.—A shrub with shortly-stalked ovate or oblong glabrous leaves; flowers snowy white in pendulous cymes; pedicels elongate, very slender. (Illustrated in *Gardeners' Chronicle*, Dec. 12, 1885, p. 745.)

TYPHA MINIMA.—A quaint little water-plant, with flowers in cylindrical brown fluffy masses, about 1 inch long, around the top of the rush-like stems.

VERONICA.—Natural hybrid, with broad, spoon-like, oblong, acute concave leaves $\frac{3}{4}$ in. long, and terminal pyramidal spikes of purplish-blue flowers.

VERONICA ANOMALA.—A New Zealand shrub with small, decussate, sessile, deep green, oblong, acute leaves, less than $\frac{1}{2}$ in. long, and terminal heads of numerous small white flowers.

VERONICA BUXIFOLIA.—Leaves small, oblong; flowers white, in terminal heads.

VERONICA DECUMBENS.—Leaves oblong, sessile, from a broad base, about an inch long; flowers white, anthers purple, in terminal heads.

VERONICA GLAUCO-CERULEA, with glaucous oblong acute leaves more than $\frac{1}{2}$ inch long. Flowers bluish-lilac, in terminal heads.

VERONICA HENRYENSIS x. —Shrub with thick glabrous lanceolate leaves, about 1 $\frac{1}{4}$ in. long; flowers numerous, lilac and white, in elongated pyramidal racemes.

VERONICA SEEDLING.—A shrub with linear, oblong, acute leaves, about 3 to 4 inches long, and with faintly-toothed edges. The racemes are pyramidal in terminal clusters, each raceme with numerous white flowers.

VERONICA VERNICOSA.—In foliage not very unlike *V. anomala*, but the flowers are much less numerous, and flushed with lilac.

Mr. SCAPLEHORN sends flowers of *CYTISUS SCHIPKAENSIS*, a dwarf, erect shrub with trifoliate leaves, with oblong apiculate leaflets, and terminal heads of white flowers, each about 1 inch in length. The golden-leaved Plum is also very attractive. Messrs. BARR & SON send an interesting monstrosity of the "Hen-and-Chicken" description in *HELENIUM HOOPESII*; the secondary heads are very numerous, and borne on very long slender, decurved pedicels.

THE ROYAL HORTICULTURAL SOCIETY'S EXAMINATION.—The Royal Horticultural Society's annual examination in the principles and practice of horticulture was held last April, and over 200 papers were sent in, the report upon which has lately been issued. The maximum number of marks was awarded to Miss E. WELTHIN-WINLO, from the Horticultural College, Swanley, Kent, and other students of this College were also successful. In comparison with the results of previous years, it is noted that the number of

entries has greatly increased, and that the questions were, as a rule, very satisfactorily answered, though the candidates needed a reminder to keep more closely to the text of the questions to be answered.

"HOLIDAYS ON THE CONTINENT."—This is the attractive title of a booklet sent out by the Great Eastern Railway Company, and giving particulars of new Continental tours *via* the Royal Mail Harwich and Hook of Holland route. Much valuable information is here given briefly; but the chief charm of the pamphlet lies in the beautiful and artistic illustrations of Holland, North Germany, Switzerland, Norway, and Belgium, which are quite worth a place in any scrap-book. Intending travellers can obtain more detailed information from any of the Great Eastern Railway Company's agents or booking offices.

MASONS AT STONELEIGH ABBEY.—Lord LEIGH's beautiful park near Kenilworth presented a very animated appearance on the 3rd inst., when a Masonic Festival of some magnitude was held there. At the luncheon, and in various other ways, Mr. MARTIN, gardener at Stoneleigh, carried out a scheme of decoration that was much appreciated.

FALKLAND PARK.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THIS is a noteworthy residence on the summit of South Norwood Hill, and may be described as possessing one of those suburban gardens for which London is happily famous. The house was built some ten years or more ago, by Mr. Thomas McMeekin, an old Kewite who left Kew in 1865, to take a responsible position in one of the colonies, and who afterwards acquired an interest in some Tea plantations. Returning to England, Mr. McMeekin bought from Lord Falkland, the land upon which Falkland Park is now situated, and at once set about building a residence and forming a garden. It is said that the late Malcolm Dunn of Dalkeith had some share in the laying out of the grounds, which cover an area, inclusive of the residence and kitchen-garden, of 20 acres. In addition to this there is a meadow attached which measures 10 acres.

The grounds may be said to face the south-east, for on this side of the house alone is there an unbroken view of the surrounding country. Here, however, the range is an unusually long one, and of great breadth, extending over the valley in which the town of Norwood lies, right up again over the Shirley hills. To the right, one can look over Croydon, and to the left over Beckenham.

The photograph of the house which is reproduced in the Supplement shows this south-east side, with the conservatory running from the house in the same direction; while the south-west front, where there is a small flower-garden, is also visible. The present proprietor, C. H. Walker, Esq., who purchased the place from Mr. McMeekin less than two years ago, is now enlarging the house by building a billiard-room, with a suite of rooms above it.

The grounds have been laid out with a view to creating as many features as possible in the area, and this has necessarily been done at the expense of forfeiting the advantages of a more bold system. Beds of ornamental-leaved and flowering evergreens frequently occur in the greensward, and isolated specimens of *Retinospora*, variegated *Hollies*, *Golden Yews*, double-flowering *Thorns*, *Yuccas*, and many other species are even more numerous. On the south-east side there is a nice specimen of *Taxodium distichum*, and several of the *Lebanon Cedar*; whilst there are fine *Oaks* that seem to indicate that the soil of this particular spot is better than generally the soil of the estate is reputed to be. One of these has grown into a remarkable form, for it is like a partially-inflated umbrella or a gigantic *Toadstool*. Near the foot of one of these, and in company with many

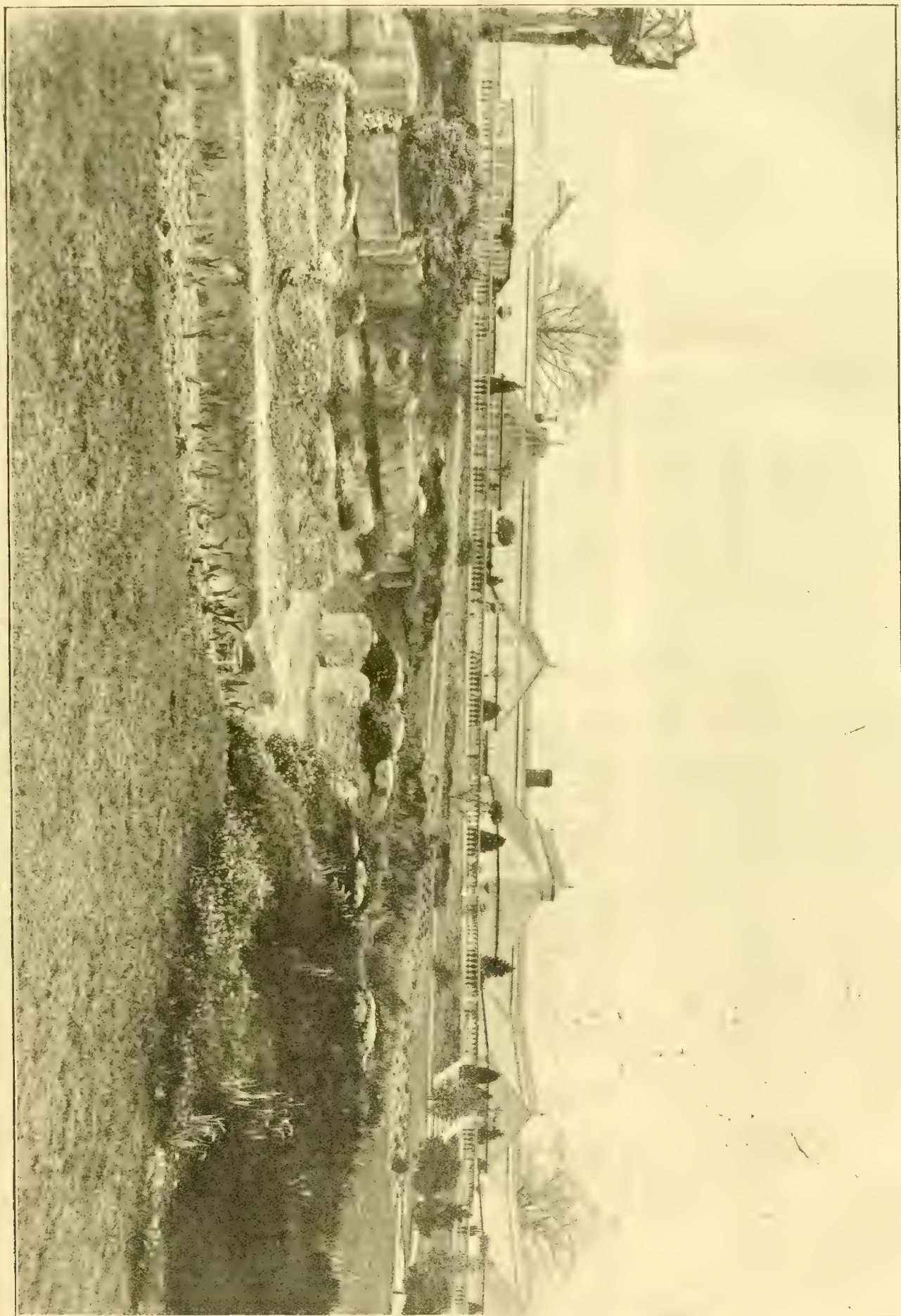


FIG. 6.—A VIEW OF THE RANGE OF GLASSHOUSES IN THE GARDENS OF C. H. WALKER, ESQ., FAIRLAND PARK, SOUTH NORWOOD, SURREY. (SEE P. 34.)

useful species of plants, was noticed *Funkia cordata* growing splendidly, at present possessed of numerous very strong spikes of its bluish flowers.

The estate is terminated upon the south-west side by an Oak wood, the ground of which is more or less covered with the cheery bracken. This wood fortunately belongs to the estate, and some thousands of Primroses and flowering bulbs are being planted in it.

On the same side, but a little nearer the house, is a small American garden and a Rose-garden; and immediately under the residence, as already described, there is a kind of terrace-garden, possessing a few simple beds, some of which are planted with *Alternantheras* and the like, and in which there are now placed a few large specimens of trimmed Laurels in tubs.

The main carriage entrance to the estate approaches the house from the north-east, and is, perhaps, 300 yards long. Near to this are several very beautiful Lebanon Cedars, also a fine Mulberry-tree; and the general appearance of the scene, with its well-kept gravel paths and thickly studded greensward, is pretty.

We have not yet alluded to a very important feature of the grounds, for so we must describe the water. There are several lakes, or rivulets, as the larger one may more fitly be described, and all are artificial. Two smaller ones at present are very attractive, they contain plenty of water, and its surface is bright with numerous flowers of the *Nymphaeas alba* and *sulphurea*. But the longer one was made insufficiently well, and its sides too easily permit the water to filter through them; consequently it is next to impossible to keep it filled with water during very dry weather. In its bed and around the sides are Typhas, Irises, and numerous other aquatic and bog plants; but if such a scene is to be gratifying during summer, it is essential to maintain in it a sufficient quantity of water. *Hymenocallis flava* and the Irish Heath were blooming splendidly. There is quite a number of such-like species of plants in the beds near to the water, which at one point is spanned by a round, rustic, wooden bridge. Beds of Carnations promise splendidly. They succeed well in this garden.

The principal houses consist of the range, illustrated on p. 33, from a photograph taken by Mr. Gregory of Croydon from a point just below the larger rivulet. The steps shown in the picture lead on to the centre of the terrace, which is shown but little in the photograph, but which consists of greensward and beds of ornamental plants. The range consists of seven span-roofed houses, running from north-west to south-east, one of which has not come into the focus of our photograph. Being in an ornamental part of the grounds, the houses themselves have been made attractive in appearance. They are about 25 feet long, 16 feet wide, and vary from 14 feet to 18 feet high. At the north-west end they all open into a delightful corridor, 80 feet long, in which at each end there are tempting recesses or ferneries built of "Pulhamite" stone. The corridor is just now a pretty picture, its walls and roofs being covered with *Heliotropes*, *Jasmines*, *Bougainvilleas*, *Passifloras*, *Roses*, *Lapagerias*, *Pelargoniums*, and the unique coloured *Lasiandra macrantha*, which succeeds here well.

In house No. 1 there is grown a collection of hard-wooded plants, including *Pimeleas*, *Acacias*, *Ericas*, *Epacris*, *Witsenia corymbosa*, &c., but its appearance is brightened by *Celosias*, *Hydrangea Hortensia*, and a lovely *Solanum jasminoides*, that, with a prodigal display of white blossoms, screens a rafter. No. 2 contains *Cannas*, *Azaleas*, *Celosias*, and *Gloxinias*, but it is intended to make this one a stove. All are very efficiently heated, and they can be made hot or cool divisions at desire. No. 3 is filled with Ferns in pots, and on the roof in flower are *Bougainvillea* and the lovely *Begonia Gloire de Versailles*.

No. 4, which contains a collection of stove plants, at the present time looks very attractive. Nos. 5

and 6 are Orchid-houses. In the former are *Cypripediums*, *Dendrobiums*, *Oncidium*s, *Thunias*, &c.; and in the latter a collection of *Cattleyas*, *Sobralias*, *Miltonia vexillaria*, and cooler growing *Cypripeds*. *C. gigas*, in many instances showing flower-spikes, succeeds splendidly. No. 7 is almost filled with Palms, and in the centre there is a fountain and basin. A large specimen of *Brugmansia*, 14 feet high, and planted out, gives a surprising number of blossoms. This range of houses is a most interesting one, and in few gardens have we seen a similar feature that was more pleasing.

A little to the back of this range are three less pretending structures. One of them is filled with a collection of some hundreds of plants of *Odontoglossum crispum*, many of which are now in bloom; and the others contain Melons and Cucumbers respectively. There is also a nice light span-roofed Tomato-house, which just now contains a fine crop of fruits of an excellent variety, selected during some years by the present gardener.

In the kitchen-garden to the north of the residence there are several Peach-houses and vineries; but most of the Vines are three-quarters of a century old at least, and will be renewed. One structure, however, contains Vines planted six years ago by Mr. A. Wright, who was then gardener here; and in this house there is an excellent crop of fruit of *Madresfield Court*, *Black Hamburgh*, and *Foster's Seedling*. The *Foster's Seedling* Grapes are really first-rate, there being fourteen bunches on each 15 feet long rod, and many of the bunches will weigh close upon 3 lb.

In the fruit-garden there is a very extensive collection of Apples and Pears and Plums; but there are not many trees of each variety. There is a most satisfactory crop of Apricots in the case, where Peaches are also grown.

The kitchen-garden crops are exceedingly promising. The present gardener is Mr. W. J. Simpson, who succeeded when Mr. Wright, about twelve months ago, took a similar position under Mr. Martin F. Sutton at Reading. P.

THE WEATHER IN WEST HERTS.

A WEEK of changeable but, on the whole, rather warm weather. On the 10th the temperature in shade rose to 84°, which has only once before been exceeded during the present summer. On the other hand, during the night preceding the 8th, the thermometer exposed on the surface of the lawn fell to within 4° of the freezing point—a very low reading for the midsummer month. Both at 1 foot and 2 feet deep the soil is at the present time slightly warmer than is seasonable. Rain fell on but two days of the week, the total measurement only amounting to about a tenth of an inch, and no rain-water at all has now passed through the bare soil percolation gauge for nearly eleven weeks. The winds were of about average strength, and came almost exclusively from some westerly point of the compass. The Greater Bindweed came first into flower on the 4th, or at a later date than in any year since 1891. E. M., *Berkhamsted*.

EXHIBITION OF THE SOCIETY OF GERMAN ROSARIANS.

TRÈVES.—This large and prosperous Society, which with its bi-monthly journal and experimental garden is doing so much to encourage Rose-culture and the raising of new Roses in Germany, held its annual exhibition this year on June 27 and following days in the old imperial and archiepiscopal city of Trèves on the Moselle, in the spacious grounds surrounding the Provincial Museum, and within sight of the imposing ruins of the ancient Roman palace. A more delightful setting for a Rose show it would be difficult to find; the well-kept public grounds and promenades of the city were clothed in the brightest and freshest hues of their summer attire, whilst close at hand the red sandstone hills, bedecked with vineyards, villas, and forest, through which

the river Moselle flows, met the eye whenever it wandered to the horizon. Everywhere around hovered the reposeful spirit of hoar antiquity, and when tired of admiring the newest and richest creations of the present day in the realm of the Queen of Flowers, the mind could turn to the memories of the glories of the past—Roman and mediæval, imperial and ecclesiastical—which render the city one of the most attractive on this side of the Alps to the antiquarian.

The district of Trèves and Luxemburg has been for some years past noted for its Roses, and several large Rose nurseries have been formed in the towns and villages; the taste thus created for this flower is therefore much in evidence in the public and private gardens of Trèves, and prepared the visitor for the wealth of beauty which awaited him in the grounds of the exhibition, and here everything was in order for the opening ceremony in the forenoon of June 27. A large honorary committee of residents of the city had interested themselves in the show; whilst the general management was vested in an executive committee of twenty persons, the details being carried out by six sub-committees. In connection with the latter, it may be remarked that anticipating the presence of visitors from a distance, who would be likely to make a short stay in the city, a sub-committee was appointed for arranging amusements and excursions to points of interest outside the exhibition. The respected and genial President of the Society, Herr Karl Druschki, of Görlitz, Silesia, was present throughout the show, and was well supported by Mr. Peter Lambert, the head of the executive committee; Mr. Hoffmann, the superintendent of the Society's experimental Rose-garden at Sangershausen, and others. Among the judges were Mr. Léon Simon, of Nancy; Mr. W. Pfitzer, of Stuttgart; Mr. F. Harms, of Hamburg; Mr. Jensen, of Helsingborg, Sweden; and other well known rosarians. England being represented by the writer; and all can testify to the great kindness they received at the hands of the officials of the Society and the inhabitants of the city.

The schedule was divided into two principal sections, viz, the classes for Rose plants (of all forms, from the tallest creepers down to the miniature bedding kinds), and those for cut Roses. The total number of classes was 120, varying from 300 plants (or blooms) downwards; of these, about seventy classes were open, the remainder being about equally divided between amateur and professional growers. There were also a few additional classes for implements and objects connected with Rose-culture. The Rose-plants, both standards and dwarfs, had been for the most part planted out in beds on sloping lawns in the early spring of this year, and in almost every case were growing and flowering finely. Indeed, considering the short time they had been planted, it was remarkable to see such a result; and when standing on the higher points of vantage and looking down over the masses of plants in full flower, the effect was exceedingly fine. This part of the exhibition will remain on view until the end of the summer. The cut Roses were exhibited in a handsome and tastefully-decorated tent; they were for the most part set up in bottles and glasses on tables in the continental fashion. Although one missed the evenly dressed serried ranks of huge flowers which go to make up an English Rose show, still the quality of a large proportion of the flowers was exceptionally good, and the arrangement was very tasteful.

Seedling Roses were an important feature, and several very promising novelties were exhibited by Dr. Müller of Weingarten, Mr. P. Lambert of Trèves, Mr. N. Welter of Trèves, and others, although the special prize of 1,000 marks (£50) was not awarded in this class, none of the seedlings exhibited being considered worthy of this high honour. Among the best of the newer German varieties exhibited in the various classes were *Gruss aus Teplitz* (very fine, rivalling *Marquise de Salisbury* in colour, and of stronger growth);

Eugénie Lamarch and Leonie Lamarch, two richly coloured dwarf Polyantha varieties; Baldwin, a good red Hybrid Tea in the way of Exquisite; Reichsgraf E. Kesselstatt, Tea, crimson, shaded with white; Hélène, climbing Polyantha, with pale pink flowers; Oscar Cordel, a fine crimson H.P.; and Frau Geheimrath von Boch, Tea, yellow tinted, and edged with red. Goldquells, yellow Tea, was fine in colour, but the plants were not growing vigorously. Other continental novelties well shown were Lucie Faure (Tea), Vicomtesse R. de Savigny (Tea), Monsieur Bunal (H.T.), Madame Louis Poucet (Tea), Flocon de Neige (white Polyantha), Georges Schwartz (deep yellow Tea), and Principessa de Napoli (Tea). Hybrid Tea Aurora was also very finely shown.

The principal prizes were awarded to Mr. Peter Lambert, of Trèves (the Empress Frederick's Prize of Honour for novelties and seedlings, and the prize offered by the city of Trèves for 250 standard plants); Messrs. I. Reiter & Sons, of Trèves (the prize offered by the Chamber of Commerce of Trèves for standard plants, and the prize offered by the Horticultural Society of Darmstadt for dwarf autumn-blooming Roses); Mr. H. Rottmann, of Trèves (the prize offered by the burghers of Trèves for 100 standard plants); Dr. Müller, of Weingarten (the prize offered by the President of the Society for seedlings and novelties); Mr. I. B. Lamesch, of Luxemburg (Prizes of Honour for dwarf perpetuals, forcing Roses, and for bedding Roses); Messrs. Souper & Notting, of Luxemburg (1st prize for 100 standard Tea Roses). For the most tasteful arrangement in the planting of groups, Mr. P. Lambert and Messrs. I. Reiter & Sons were equal 1sts. *Arthur William Paul, Waltham Cross.*

HOME CORRESPONDENCE.

BYE-LAWS OF THE ROYAL HORTICULTURAL SOCIETY.—When the Fellows see in print the bye-laws in Chapter VIII. which refer to voting by proxy, they will, I think, be as surprised as I was myself when I heard these bye-laws read out before the Chairman put them to the vote at the close of last Tuesday's meeting. The amendment I proposed, and which had the support of the entire meeting, as also of the Chairman and the Council (as we supposed), was distinctly proposed as an amendment to Bye-law 45, as modified and published in the letter Mr. Wilks addressed to the horticultural papers last week. This was fully understood by the meeting, who were decidedly opposed to granting to the Council the power they asked for—a power they have not had for twenty-six years past, and for granting which no sufficient reasons were adduced by the Chairman. When the bye-laws affected by this amendment were read out before the vote was taken, it was seen that the lawyer had retained the objectionable features of No. 45, and had added my amendment as an additional bye-law. The position of the Fellows is undoubtedly strengthened by this new bye-law giving, as it does, to any minority at a general meeting, which amounts to two-fifths of the total number of Fellows voting, the right to demand a poll of all the Fellows of the Society, but certainly the meeting intended that this right of appeal by such a minority should take the place in the bye-laws of Mr. Wilks' amended Bye-law No. 45, so that the Council should not have power to withdraw any question from the decision of a general meeting, unless two-fifths of the Fellows voting were in favour of their doing so. To declare, as our chairman did, that such a decision on the part of the meeting would involve an entire want of confidence in the Council, was certainly not warranted by the facts of the case. But having taken this position, and further having intimated very clearly that if the meeting passed my amendment in the form in which it had been so unmistakably approved, it might lead to the resignation of the Council, there was nothing for the Fellows to do but to vote as desired by the Chairman. No one wishes to pass a vote of want of confidence in the Council; but Sir Trevor Lawrence's remarks certainly implied a want of confidence in the Fellows attending a general meeting, when suggesting resignation

rather than acceptance of an amendment which would give the Council all they asked for, provided only that two-fifths of the Fellows voting on any occasion were in sympathy with the Council. Absolute confidence between the Council and the Fellows is most necessary in the best interests of the Society; and by the passing of the amendment in the form in which it was submitted, giving power to the Council to appeal to all the Fellows when supported by any minority of two-fifths of those voting at a general meeting, would probably have prevented entirely any feeling of want of confidence. The result of the late meeting is, that the Council obtain the exceptional powers they asked for; but it is scarcely to be anticipated that they will make use of it if, at any time, three-fifths of the Fellows voting at a general meeting are not in sympathy with any scheme submitted by the Council. *Arthur W. Sutton.*

THE ROYAL HORTICULTURAL SOCIETY AND THE ROYAL BOTANIC GARDENS.—The reflection made by "D." on p. 15 of your issue of July 7, in reference to the apparent unsuccessful outcome for the Royal Botanic Society from Government smiles bestowed, should be rather judged as a disconnected accident than a consequence, for in the contrary assumption and pronouncing a warning to the Royal Horticultural Society to beware of similar favours, it would come to signify, on common sense lines, that the latter Society, or its Council, would be capable to waste its opportunities under a Government grant—a condition not in evidence actually without such grant. Thus, the implication of failure with more means hypothetically, is hardly to be commended as a view to take in this connection, and not flattering to the Society and its Council. Mismanagement and how not to do it, is hardly a trap into which the Royal Horticultural Society would fall with reminiscences of its own, and example furnished of what to avoid. The raising of the question at all from this standpoint might deter Government from acquiescing in a grant to the Royal Horticultural Society. The promotion of the Green Park into a home for the latter Society would not clash with the Regent's Park possession, whatever became of it, and the Green Park is a better locality than Regent's Park for the purpose in view. What "D." really implies is on a par with Mr. Roupell's suggestion made at the April meeting when he reflected on the supposed inability of the Royal Horticultural Society to re-establish fertility in the soil at Chiswick as a declaration of want of horticultural intellect—a view which would accord with common sense, and would find general adherence. *H. H. Rascher, Sidcup, Kent.*

CARPENTERIA CALIFORNICA.—We have pleasure in sending herewith flowers of *Carpenteria californica*; they are gathered from a plant grown here on a south wall for five years, and which has now been in bloom three weeks or so. For the first two years we gave it a little protection in the winter, but for the last three winters it has not had any, although the last was of fully average severity, lasting four or five weeks, with 27° of frost more than once. It is satisfactory to find so beautiful a plant doing so well so far north. *J. Backhouse & Son, Ltd., York.*

SEMPERVIVUM × THOMSONI.—I enclose herewith an interesting hybrid *Sempervivum*, now in flower with me for the first time. It is the result of a cross between *S. arachnoideum* ♀ and *S. tectorum* ♂, and was raised some twenty years ago by Mr. P. Murray Thomson, Secretary of the Royal Caledonian Horticultural Society. *R. Lindsay.*

BUSCOT PARK HERO MELON.—Concerning the statement made by Mr. W. Meads, that the Melons which I exhibited at the Temple Show in May, 1900, which gained an Award of Merit, I wish to correct his assertion that the variety is the result of his crossing. How could this have been the case when Mr. Meads in the latter part of his letter distinctly says: "I had two good seedlings from the cross, and still hold the seeds of the same." How, then, could the Melons which I exhibited have been grown from seed which, according to Mr. Mead, he still holds? When I took charge of these gardens in July, 1897, there were only two varieties of Melons here, viz., Countess, and an unnamed white-fleshed variety, with partially smooth stem. The Melons which I exhibited,

which gained the Award of Merit, were obtained from seeds the result of a cross made by me in the spring of 1895. *W. L. Bastin, Buscot Park Gardens, Berks.*

—When Mr. Meads left Buscot Park Gardens in 1897, I was employed there, and I remained with Mr. Bastin who succeeded him until March, 1900. I saw Mr. Bastin make the cross early in 1898, which resulted in the Buscot Park Hero Melon. I watched with interest the care which he took with it. *G. Grant, Foreman, Pen-y-gre Gardens, Brecon.*

STRELITZIA.—I have the pleasure to enclose a photograph of the *Strelitzia* now flowering in my conservatory. It is a plant I have had for some years, and with which I am also well acquainted with in Algiers, but I have never before seen two flowers growing in opposite directions out of one stem as shown in the photograph. Each of the flowers are as good as the ordinary single one. I have a good water-colour drawing of the single flower. This picture is quarter life size. The photograph was taken here by Mr. James, the florist, Farnham Common. *F. C. Carr Gomm.*

SCHUBERTIA GRANDIFLORA.—This lovely climbing plant, if it be not a rival to *Stephanotis grandiflora*, is a very useful one, whose white, sweet-scented flowers are liked, its peculiar refreshing fragrance, reminiscent of Cocoa-nut, Almonds, and others making it a great favourite in the making of bouquets. The flowers accompanying this note were taken from a plant that is growing in a confined bed, and whose shoots ramble over the roof of a stove at Birdsall. The soil in which it is planted is such as is usually found suitable for *Stephanotis*. It is a free-growing plant, apparently deriving benefit from abundance of liquid-manure. It is always pruned at the end of the winter. *Bailey Wadds, Birdsall, York, July 10.*

MR. ROBERT FENN.—Kindly permit me to make through your columns a brief appeal to all old friends (and especially Potato friends) and admirers of Mr. Robert Fenn, of Sulhamstead, and formerly of Woodstock, on his behalf, now that in his great age (eighty-four years) a sad misfortune has befallen him. On June 26, whilst in his garden, he slipped down, and in doing so, broke one of his legs, thus rendering him quite helpless, and placing him on a bed of sickness, where, it is pleasant to learn, in spite of the misfortune, he is very cheerful and full of vitality. A singularly active, energetic man, whose soul seemed to be in his garden, to be thus thrown on his beam ends in the evening of his existence, is indeed a grave trouble. Rarely has there been found in all the world of hybridists one more intensely enthusiastic, one who laboured more earnestly or unselfishly to promote the development and welfare of the Potato. Dependent for some years chiefly on his own labours, especially in discharging various parochial offices for which his fellow parishioners would not, even at so great an age, be denied; confronted by heavy expenditure for medical and nursing attendance, his aged wife an invalid, it does seem as if just now it were peculiarly a fitting time to offer to our old friend some little assistance in the form of a testimonial to his great services to horticulture. May I beg the editor of the *Gardeners' Chronicle* kindly to act as treasurer, and receive subscriptions? *Alex. Dean, 62, Richmond Road, Kingston-on-Thames.*

THE WEATHER IN NORTH CORNWALL.—June began well. The first four days were typical June weather, warm and sunny; unfortunately this weather culminated in a thunderstorm during the night of June 4, and was followed by cold showery weather, interspersed with an all too occasional sunny day, which lasted the remainder of the month. The maximum temperature, registered by a thermometer 3 feet from the ground, and facing due north, was 78° Fah. on Monday, June 4, and the minimum 38° on the 1st, and on only four days did the thermometer register more than 70°. The barometric pressure has been very steady, the highest reading was 30.21 inches at 8 A.M. on the first day of the month, and the lowest 29.45 inches at 8 P.M. on the last day of the month. The rainfall amounted to 3.30 inches; there were fifteen rainless days, and the greatest fall during twenty-four hours was .91 inch, measured at 9 A.M. on Wednesday, June 13. *A. C. Bartlett, Pencarrow Gardens.*

SOCIETIES.

ROYAL HORTICULTURAL.

Fruit and Vegetable Committee, Chiswick.

JULY 11.—A meeting of the Fruit and Vegetable Committee was held here on the above date to complete inspection of Peas, &c.

Present: Messrs. Balderson (in the Chair), W. Marshall, E. Beckett, A. F. Barron, G. Wythes, Gleeson, G. Kelf, S. Mortimer, Esling, Bates, Markham, and A. Dean.

The late Peas were found to be for Chiswick in very excellent form, better has seldom been seen there. Awards of Merit to Duke of York and Captain Cuttle were confirmed. A First-class Certificate was granted to Alderman, of which there was also a fine stock seen under the name of Royal Standard. Alderman is without doubt the finest 6 feet Pea in commerce. Awards of Merit were given to Sutton's Peerless, 3 feet, very fine cropper; and Sharpe's Standard, 4 feet, very prolific. Also as late Peas, to Fascination, medium sized pod, green, and wonderfully free; and Late Queen, a fine podded variety, also seen under the name of Victoria. There were no fewer than four of Ne Plus Ultra, seen under diverse names. Three marks were given to Harrison's Stocks of Emerald, a capital green Cabbage-Lettuce; and also to Harrison's King, a fine, good-standing, curled Cabbage-Lettuce. A few early Potatoes, some fifteen varieties, were lifted, and the best croppers, eight in all, were ordered to be cooked. Several, such as Ninety-fold, May Queen, The Major, Ringleader, Sharpe's Very Early, and Pioneer, gave quite fine tubers.

After cooking and tasting, the Committee awarded a First-class Certificate to Sharpe's Very Early, as having the best quality in that stage; and gave Awards of Merit to Ringleader and Ninety-fold as being the next best. But the trial was rather early, and several varieties will be tested again later on when ripe. The trial of Potatoes, early and late, is a very large one, this year showing new ones rather abundantly.

NATIONAL ROSE.

JULY 7.—This important show was held at the Crystal Palace on the above date. Its general features are alluded to on p. 30, but for fuller details, the reader may consult the following report.

NURSERYMEN.

Seventy-two blooms, distinct varieties.—There were six competitors in this important class, which is exactly the same number as last year. The Challenge Trophy and 1st prize were won somewhat easily by Messrs. A. DICKSON & SONS, Newtownards, Ireland. Their exhibit was composed of very good blooms of considerable size and satisfactory substance. The varieties were:—Back row: Marquis of Londonderry, Captain Hayward (very nice), Souvenir de la Petite Amie, Chas. Lefebvre, Mrs. John Laing, Ulrich Brunner, Alice Lindsell, Janet Scott (new), Marie Verdier, Robert Scott (new), possibly a seedling from Her Majesty, which it resembles, but is paler in colour; Merveille de Lyon, Gustave Piganneau, Marchioness of Dufferin, Star of Waltham, Mdle. Hoste, Earl of Dufferin, Caroline Testout, François Michelon, Comtesse de Serenye, Susanne Marie Rodocanachi (Silver Medal), Maman Cochet, Helen Keller, Her Majesty, Etienne Levat. Second row: Mme. Eugénie Verdier, Horace Vernet, Hon. Edith Gifford, Alfred Colomb, Souvenir d'Elise, Marie Rady, Mildred Grant, Mme. Hausmann, Comtesse de Nadaillac, La France, Mrs. W. J. Grant, Marie Baumann, Florence Pemberton (new), Shandon, The Bride, Gladys Harkness, Margaret Dickson, G. H. Mackereth, Mrs. Ed. Mawley, Tom Wood, Bessie Brown, A. K. Williams, K. A. Victoria, and Duke of Fife. Front Row: Ernest Metz, J. S. Mills, Marchioness of Downshire, Dupuy Jamain, Avoca, Comte Raimbaud, White Lady, Mrs. R. G. Sharman Crawford, Souvenir de S. A. Prince, Xavier Olibo, Anna Olivier, Duke of Edinburgh, Niphetos, E.Y. Teas, Lady M. Fitzwilliam, Oscar Cordell, Marquise Litta, Baroness Rothschild, Duchesse de Morny, Muriel Grahame, Prosper Langier, Daisy and Alice Grahame (new), and Madame de Watteville. Mr. B. R. CANT, Colchester, was 2nd, and in a commendable exhibit the following varieties were particularly attractive:—Duchesse de Morny, Cleopatra (very fine, worthy of a medal), Souvenir d'Elise, A. K. Prince, Dupuy Jamain, Marquise de Litta, Marie Finger, Camille Bernardin, Madame Hoste, Niphetos, and Madame Henri Percire; 3rd, Messrs. D. PRIOR & SON, Colchester.

Forty distinct varieties (trebles).—This class produces a show in itself, and was won by Messrs. A. DICKSON & SONS, who showed a very even collection, in which the following varieties were the more effective:—Janet Scott, a bright rose-coloured seedling of Messrs. Dickson's, in colour suggestive of Mrs. W. J. Grant; La France, Mrs. W. J. Grant, Marchioness of Downshire, Ulrich Brunner, Earl of Dufferin, Mrs. R. G. S. Crawford, Marie Baumann, Horace Vernet, Mrs. John Laing, Marquise de Litta, Gustave Piganneau, Louis Van Houtte, &c.; Avoca, Alice Lindsell, Robert Scott, and Lady M. Beauchamp were also new varieties in this stand. Mr. B. R. CANT was 2nd, and in this stand we noticed fine trebles of Mrs. Cocker, Duchesse de Morny, and Cleopatra; Messrs. F. CANT & Co. were 3rd. There were two unsuccessful exhibitors, so that 600 blooms were exhibited in this class, just as was the case last season, when the 1st prize winners were Messrs. PRIOR & SON, Colchester.

Forty-eight blooms distinct varieties.—The champion in this class was almost a new exhibitor at this show, Mr. HUGH DICKSON, of Belfast. He had amongst others, excellent specimens of Gustave Piganneau, Mrs. Jno. Laing, Mrs. W. J. Grant, Susanne-Marie Rodocanachi, Capt. Hayward, Miss Jennie Dickson, and Souvenir de Mme. Eugene Verdier. 2nd, Messrs. J. BURRELL & Co., Cambridge, who had conspicuous examples of Maréchal Niel, Killarney, Gustave Piganneau, Prince Arthur, White Maman Cochet, &c. 3rd, Messrs. J. TOWNSEND & SON, Worcester. There were five collections staged in this class.

Twenty-four blooms distinct varieties.—The 1st prize was awarded to Mr. W. TAYLER, Hampton, Middlesex, who showed the following varieties. Back row: Ulrich Brunner, Margaret Dickson, Victor Hugo, Jeannie Dickson, Susanne-Marie Rodocanachi, Mrs. Crawford, Countess of Pembroke, Mrs. John Laing. Centre row: Her Majesty, Duke of Teck, Fride of Waltham, Prince Arthur, Augustine Guinoisseau, Gustave Piganneau, Vicountess Folkestone, Horace Vernet. Front row: Duchesse de Bedford, Ernest Metz, Duke of Connaught, Comtesse de Nadaillac, Comte de Raimbaud, Madame Hoste, A. K. Williams, and Kaiserin Augusta Victoria. Mr. J. MATTOCK, Oxford, was 2nd, with brightly coloured but rather small blooms. The best were Comtesse de Nadaillac, Marquise Litta, Mrs. J. Laing, and Horace Vernet. 3rd, Mr. G. PRINCE, Oxford, who was strong in Teas: Catherine Mermet, Comtesse de Nadaillac, Caroline Testout, Captain Hayward, K. A. Victoria, and Baronne de Billoche, were capital. The judges awards in this class were severely and pretty generally criticised. Some thought the 1st prize should have been given to Mr. PRINCE's collection, and we agree with them.

Twenty-four distinct varieties (trebles).—There were several more competitors in this class than there were last year. The winners of the 1st prize were Messrs. J. TOWNSEND & SONS, Worcester. The following varieties were most effective: Victor Verdier, Marquise Litta, Marchioness of Londonderry, Alfred Colomb, Niphetos, Ulrich Brunner, Margaret Dickson, Fisher Holmes, Madame Cusin, A. K. Williams, &c.; 2nd, Mr. J. MATTOCK, of Oxford. From five other exhibitors, the most successful for 3rd prize were Messrs. G. & W. H. BURCH, Peterborough.

Twelve distinct varieties, seven trusses of each.—In this class the exhibits have to be staged in twelve vases, and the varieties shown must not include any known to the National Rose Society as "garden" Roses. We do not regard this class as a very satisfactory one, and it is difficult to follow the judges in their distribution of Awards. Why limit the class to exhibition varieties, if small blooms be used, because they have a better appearance in the vases? Each group of seven blooms is judged as one unit, and individually those shown were not of conspicuous quality. Mr. B. R. CANT won 1st prize, his best specimens being Mrs. John Laing, Fisher Holmes, Margaret Dickson, Ulrich Brunner, Madame Gabriel, Captain Hayward, Mrs. W. J. Grant, General Jacqueminot, and Mrs. R. G. Sharman Crawford; 2nd, Mr. JNO. MATTOCK, who had mostly Tea varieties, and who placed the vases over a black velvet cloth; 3rd, Mr. G. PRINCE. One exhibitor included specimens of Madame Abel Chatenay and M. Jules Grolez, and was accordingly disqualified.

Nine Distinct Varieties, Seven Blooms of Each.—Any varieties could be shown in this class. The 1st prize was won by Mr. J. PRINCE, Oxford, whose collection was unnamed—a serious omission. They were mostly Tea varieties, including Madame de Watteville, Marie Van Houtte, and Souvenir de S. A. Prince; Mr. J. MATTOCK was 2nd; and Mr. B. R. CANT 3rd.

TEAS AND NOISETTES.

The lovely Roses that belong to these sections were not shown quite so well as the hybrid perpetuals or the decorative varieties, but at the same time we believe them to have been quite up to the average quality.

Twenty-four blooms, distinct varieties.—This class was won by Mr. GEO. PRINCE, who had a capital collection of the following varieties:—Back row: Comtesse de Nadaillac, Souvenir de S. A. Prince, Maman Cochet (very fine), Innocente Pirola, Bridesmaid (Silver Medal), The Bride, Madame de Watteville, and Medea. Second row: Muriel Grahame, Catherine Mermet (very good), Rubens, Princess of Wales, Golden Gate, Maréchal Niel, White Maman Cochet, and Ernest Metz. Front row: Marie Van Houtte, Anna Olivier, Cleopatra, Madame Hoste, Madame Cusin, Alba Rosea, Souvenir d'un Ami, and Souvenir d'Elise Vardon. 2nd, Mr. B. R. CANT, Colchester, whose best varieties were Ethel Brownlow, Madame Hoste, Madame de Watteville, and Niphetos. Messrs. FRANK R. CANT & Co., Braiswick Nurseries, Colchester, beat one other exhibitor for the 3rd prize.

Twelve blooms, distinct varieties.—A dozen blooms of excellent quality were shown by Mr. JNO. MATTOCK, who displayed the following varieties:—Back row: Souvenir d'Elise, Maman Cochet, Souvenir de S. A. Prince, Souvenir de Petite Ami. Centre: Catherine Mermet, The Bride, Comtesse de Nadaillac, and Innocente Pirola. Front row: Miss E. Gifford, Miss E. Brownlow, Medea, and Princess of Wales. 2nd, Messrs. J. BURRELL & Co., who had praiseworthy specimens of Mrs. Ed. Mawley, Bridesmaid, Ernest Metz, Maman Cochet, and Muriel Grahame; 3rd, Messrs. HARKNESS & SON, Bedale and Hitchin, whose collection, though uneven, contained beautiful blooms of Niphetos, Catherine Mermet, and Souvenir d'Elise.

Eighteen blooms, distinct (trebles).—The best trebles in Teas were shown by Mr. GEO. PRINCE, but Teas are not so showy when grouped in trebles as are H.P.'s. Those most effective were Maman Cochet, Golden Gate, Mme. de Watteville,

Comtesse de Nadaillac, and Mme. Cusin; 2nd, Messrs. D. PRIOR & SONS, who had good trebles of Maman Cochet, Muriel Grahame, and Catherine Mermet; 3rd, Mr. B. R. CANT.

GARDEN OR DECORATIVE VARIETIES.

The Roses that are most satisfactory in one's garden, because as a rule they grow stronger, and flower more freely than exhibition varieties, were grandly shown in the various collections.

Thirty-six distinct varieties, not fewer than three trusses of each.—Messrs. PAUL & SON, The Old Nurseries, Cheshunt won 1st prize; and Messrs. COOLING & SON, Bath, 2nd. These firms obtained the same positions in the class last year. We will quote the whole of the varieties shown by Messrs. PAUL, as they will constitute an excellent guide to those who wish to obtain a first-class collection of these useful varieties. Back row: H.T. Reine Olga de Wurtemberg, H.T. Mme. P. Ducher, Rugosa, Mme. Chas. Worth, Polyantha grandiflora, P. Turner's Crimson Rambler, N. William Allen Richardson, Rugosa Souvenir de M. Cochet, and Rosa alba. Second row: N. Mma. P. Cochet, H.T. Marquise de Salisbury, T. Mme. Perney, H.T. Camoens, T. Mme. Falcot, Black Moss, Claire Jacquier, H.T. Bardon Job and Common China. Third row: N. Allister Stella Gray, Province Kakanlek, White Moss, Paul's Carmine Pillar (single), H.T. Gustave Regis, H.T. Dawn, a lovely single pink-flowered variety, introduced several years ago; Rugosa fimbriata, Rosa Mundi, and White Pet. Fourth row: H.P. Royal Scarlet (single), P. Anna M. de Montravail, N. L'ideal, Una (single yellow), Old Red Damask, T. Mme. Chedane Guinoisseau, Tuscany, The Garland, T. Ma Capucine, and the new Noisette, Psyche. Messrs. G. COOLING & SON, Bath, included a grand bunch of Cooling's himalaica, with single white flowers, having showy yellow stamens; 3rd, Mr. JOHN MATTOCK.

Eighteen distinct varieties, not fewer than three trusses of each.—The only exhibitor in this class was Mr. CHAS. TURNER, of the Royal Nurseries, Slough, who had a nice collection.

An extra class (open) for the same number of varieties, but not fewer than three or more than seven trusses of each, was also won by Mr. CHAS. TURNER. In this exhibit the following varieties were beautiful: Grussans Teplitz, Lady Sarah Wilson, large, single blush; Crimson Rambler, Gustave Regis, Crimson Damask, W. A. Richardson, uncommonly richly coloured; Rosa Mundi, Madame Pernet Ducher, Thoresbyana, Ma Capucine, Princess Marie, Reine Olga de Wurtemberg, Anna Marie de Montravail, Alister S. Gray, Souvenir de Guillot, Papa Gontier, Papillon, and Madame Falcot. Mr. Jas. MATTOCK was 2nd.

OPEN CLASSES.

Twelve blooms of hybrid Teas, distinct.—Messrs. A. DICKSON & SONS were 1st, and exhibited these peculiarly attractive varieties very finely. There were the following:—Marquise Litta (very fine, full flower), White Lady, Mrs. W. J. Grant, Caroline Testout; centre: Bessie Brown, La France, Charlotte Guillemot, and Rosa Marie. Front Row.—Alex. Fuguiet, Kaiserin Augusta Victoria, Souvenir de Madame Eugénie Verdier, M. Jules Grolez, and Madame Cadeau Ramey. Mr. B. R. CANT, who was 2nd, had very nice blooms of Mrs. W. J. Grant, Marquise Litta. Messrs. FRANK CANT & Co. were best of five other exhibitors.

Twelve blooms of any Yellow Rose.—The best Rose in this class was Comtesse de Nadaillac, superb in form and colour, from Mr. GEO. PRINCE; 2nd, Maréchal Niel, from Messrs. HARKNESS & SONS; and 3rd, Comtesse de Nadaillac, from Mr. J. MATTOCK. There were two other exhibits.

Twelve blooms of any White Rose.—The best was Bessie Brown, from Messrs. A. DICKSON & SONS; 2nd, Merveille de Lyon, from Mr. B. R. CANT; and 3rd, The Bride, from Messrs. PRIOR & SONS.

Twelve blooms of any light or dark Crimson Rose.—The variety Captain Hayward was shown in splendid colour by Mr. HUGH DICKSON, Royal Nurseries, Belfast; 2nd, Marquise de Litta, from Messrs. ALEX. DICKSON & SON; 3rd, Marquise de Litta, from Messrs. J. TOWNSEND & SONS. There were as many as eleven exhibits in this class, and among the varieties staged unsuccessfully were Victor Hugo, Ulrich Brunner, and Marie Baumann.

Twelve Blooms of any Light Pink or Rose-coloured Rose.—The variety, Mrs. John Laing, usually 1st in this class, was beaten now by that of Mrs. W. J. Grant, as shown by Messrs. DICKSON & SONS; Mrs. John Laing was 2nd, from Messrs. HARKNESS & SONS; and the same from Messrs. TOWNSEND & SON, was 3rd. There were eighteen exhibitors.

Twelve Blooms of any Tea or Noisette Rose.—The best in this class was Bridesmaid, from Mr. B. R. CANT, who had a dozen blooms, possessing capital centres, and good in colour. The variety, Mrs. Ed. Mawley, from Messrs. DICKSON & SONS, was 2nd; and Souvenir d'Elise, 3rd, from Messrs. HARKNESS.

Three Sprays of Roses, Suitable for Ladies' Wear.—The best sprays were shown by O. G. ORPEN, Esq., who had a pretty one composed of flowers of the variety Allister Stella Grey and two others; Mr. J. MATTOCK was 2nd; and Miss B. H. LANTON 3rd.

NEW ROSES (OPEN).

Nine Blooms of any New Rose.—The 1st prize was awarded to a variety named Alice Lindsell, from Messrs. ALEX. DICKSON & SONS; it is a large Rose, of pale pink colour, with petals like those of Her Majesty; but this Rose has a better centre than Her Majesty. 2nd, Mrs. Cocker, from Mr. B. R. CANT; in colour this Rose is like Mrs. John Laing, but has a silvery sheen over it. 3rd, Mrs. Frank Cant, from Messrs. F. CANT & Co.

Three blooms, distinct varieties, not Catalogued by Nurserymen.—The 1st prize in this class was awarded to Messrs. DICKSON & SONS, who staged the following varieties:—Madame Cadeau Ramey, Mrs. Ed. Mawley, Bessie Brown, Rev. Alan Charles, Ada Carmody, White Maman Cochet, Comtesse of Caledon, M. Jules Grolez, Madame Eugénie Bouillet, Killarney, Liberty (deep crimson, H.T.), and Lady Mary Cory. Messrs. F. CANT & CO. were 2nd, and showed the following varieties, not included in the 1st prize collection: Ulster, Mrs. Frank Cant, Mrs. F. W. Sandford, Ethel Richardson, and Shandon. Mr. B. R. CANT was 3rd.

Single-flowered Roses, twelve distinct varieties.—The 1st prize in this class was won by Messrs. PAUL & SONS, The Old Nurseries, Cheshunt. They had *rugosa alba*, Paul's Carmine Pillar, *Polyantha grandiflora*, Pink Roamer, *macrantha rubrifolia*, *Brennus*, *rugosa humilis* (purplish-rose), Paul's Single White, *Wichuriana's General Jacquemont* (bright rose colour), Andersoni, and Penzance Briar Brenda, a very pretty pink-flowered variety; 2nd, Messrs. G. COOLING & SONS, Bath; and 3rd, Messrs. FRANK CANT & CO.

Nine varieties, suitable for use in "Bottlenoses."—The best were from Mr. JOHN MULLOCK, and the following varieties may be accepted as well adapted for the purpose: Souvenir de Catherine Guillot, Safrano, Anna Olivier, Gustave Regis, Ma Capucine, The Bride, Madame Chedane Guinnoisseau, Rubens, and Amazone. The 2nd prize was won by H. T. MACHIN, Esq., Gateford Hill, Worksop; 3rd, Mr. GEO. PRINCE.

PREMIER BLOOMS.

The best H. P. Bloom shown in the nurserymen's classes was *Suzanne Marie Rodocanachi*, in Messrs. DICKSON'S 1st prize exhibit in the class for seventy-two blooms. The best H. T. was Mildred Grant, shown by Mr. W. TAYLOR; and the best Tea Bridesmaid, shown by Mr. GEO. PRINCE in the class for twenty-four blooms.

AMATEURS.

There appeared to be no falling off in the number or quality of exhibits from amateur's gardens, a fact that should be very satisfactory to the National Rose Society.

Thirteen blooms, distinct varieties.—Again did the Rev. E. B. LINDSELL, of Hitchin, assert his superiority as an amateur Rose-grower, by winning the Challenge Trophy and 1st prize in this class. His varieties were Mrs. John Laing (excellent), Marquise Litta, White Lady, Gustave Figanneau, Mrs. W. J. Grant, François Michelon, Her Majesty, Captain Hayward, Souvenir d'Elise, Marie Baumann, Marchioness of Londonderry, Ulrich Brunner. Centre row: Maurice Bernardin, Madame Cusin, Louis Van Houtte, Muriel Grahame (Silver Medal), Prince Arthur, The Bride, A. K. Williams, Innocente Pirola, Chas. Lefebvre, Comtesse de Nadailac, Souvenir d'Elise, and Mrs. Mawley. Front row: K. A. Victoria, Dupuy Jamin, Lady Mary Fitzwilliam, E. Y. Teas, Caroline Kuster, Duke of Wellington, Catherine Mermet, Suzanne Rodocanachi, La France, Helen Keller, Bessie Brown, and Madame J. Verdier. The 2nd prize was won by Mrs. HAYWOOD, Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter), whose best flowers were Ulrich Brunner, Merveille de Lyon, Alfred Colomb, Mrs. J. Laing, and Marie Baumann. 3rd, T. HOBBS, Esq., Bristol. There were five exhibitors.

Twenty-four blooms, distinct.—Ten exhibitors competed for honours in this class, and the most successful of them was O. G. ORPEN, Esq., Hillside, West Bergholt, Colchester, who staged the following varieties:—Back row: Suzanne Rodocanachi, Maréchal Niel, La France, White Lady, Marquise de Litta, Mrs. S. Crawford, Earl of Dufferin, Her Majesty. Centre row: Bridesmaid, Ulrich Brunner, Lady M. Fitzwilliam, Mrs. J. Laing, K. A. Victoria, Merveille de Lyon, and Maurice Verdier. Front row: Mrs. W. J. Grant, Anna Olivier, Comtesse de Ludre, Mme. Hoste, Marie Finger, Souvenir d'Elise Vardon, The Bride, and Ernest Metz. 2nd, A. TATE, Esq., Downside, Leatherhead, who included very nice blooms of Horace Vernet, White Lady, and François Michelon; 3rd, T. HOBBS, Esq., Bristol.

Twelve distinct varieties (trebles).—Mrs. HAYWOOD beat three other exhibitors in this class, and showed nice even blooms of good colour. The best were Ulrich Brunner, Abel Carrière, A. K. Williams, Mrs. J. Laing, and Marie Baumann; 2nd, A. TATE, Esq.; 3rd, Rev. J. H. PEMBERTON, Havering-atte-Bower, Romford.

For twelve trusses of any Rose, except Teas or Noisettes.—The variety Mrs. John Laing, capably shown by E. B. LINDSELL, Esq., Hitchin, was placed 1st; and Mr. W. J. Grant, from H. V. MACHIN, Esq., Worksop, 2nd; 3rd, Mrs. Laing again, from C. J. GRAHAME, Esq., Wrydelands, Leatherhead.

RESTRICTED CLASSES.

That its members may fight under fair conditions, the National Rose Society divides them into groups, and the large growers must compete among themselves, being excluded from others which are reserved for those having fewer plants from which to collect exhibition blooms. The classes immediately following were for growers of fewer than 2000 plants of exhibition varieties.

Twenty-four blooms, distinct varieties.—The 1st prize exhibitor among five was E. M. BETHUNE, Esq., Denne Park, Horsham, who in a good exhibit had particularly nice flowers of Captain Hayward, The Bride, Mrs. John Laing, Madame Gabriel, Bridesmaid, and Duke of Edinburgh; 2nd, F. TATTERSALL, Esq., Morecombe (very good); 3rd, R. E. WEST, Esq., Reigate.

Eighteen blooms, distinct varieties.—This class was won by EDWARD MAWLEY, Esq., Rose Bank, Berkhamsted, and Hon. Sec. of the National Rose Society. His best flowers were

Caroline Testout, Bridesmaid, Margaret Dickson, and Madame G. Luizet; 2nd, P. BURNARD, Esq., Reigate; and 3rd, C. JONES, Esq., Gloucester.

Eight distinct varieties (trebles).—C. JONES, Esq., Gloucester, was 1st, with the following varieties:—Mrs. W. J. Grant, Duchess of Bedford, Ulrich Brunner, Duke of Wellington, Helen Keller, A. K. Williams, and Caroline Testout; 2nd, ED. MAWLEY, Esq.; and 3rd, R. E. WEST, Esq.

The best collection of nine blooms of any Rose other than a Tea or Noisette was from W. BURNARD, Esq., Reigate, who showed Mrs. G. S. Crawford; E. M. BETHUNE, Esq., was 2nd, with Ulrich Brunner; and C. ROMAINE, Esq., 3rd, with Mrs. J. Laing.

Open only to growers of fewer than 1,000 plants. There were thirteen exhibitors in the class for twelve blooms, distinct varieties, and R. S. HOBBS, Esq., Worcester, showed really first-class specimens. The varieties were Ulrich Brunner, Maréchal Niel, Suzanne M. Rodocanachi, Mrs. W. J. Grant, Mrs. John Laing, A. K. Williams, Marchioness of Downshire, Souvenir d'Elise, Duke of Edinburgh (small), Killarney, Niphotos, and Fisher Holmes (small); Mrs. E. C. MURRAY, Ryde, was 2nd; and the Rev. R. POWLEY, Warminster, 3rd.

Mrs. John Laing was the best shown variety in the class for six blooms of any Rose except Tea or Noisette; and very fine blooms of it were from Mr. G. W. COOK, North Finchley, London; 2nd, Mrs. SHARMAN CRAWFORD, from J. BATEMAN, Esq., Rosevale, Archway Road, London, N.; 3rd, La France, from Miss B. LANGTON, Hendon, N.W.

Open only to growers of fewer than 500 plants.—The best collection of nine blooms, distinct varieties, was shown by E. R. SMITH, Esq., Muswell Hill, London, his best blooms being Captain Hayward (excellent), Jeannie Dickson, Mrs. SHARMAN CRAWFORD, Maman Cochet, and Gustave Figanneau; 2nd, R. W. BOWLER, Esq., Hertford; and 3rd, Mrs. L. E. TIMES, Hitchin.

KEPPEL H. GIFFORD, Esq., Sutton, Surrey, won a class for six blooms, distinct varieties, his best being Mrs. John Laing, Captain Hayward, and François Michelon; R. COOK, Esq., Stoubridge Park, London, N.W., was 2nd; and G. A. HAMMOND, Esq., Burgess Hill, London, 3rd. There were twelve exhibitors.

The best Rose other than Tea or Noisette, shown in collections of sixes, was that of Caroline Testout, shown grandly from E. BEWLEY, Esq., Rathfriland, co. Dublin; 2nd, Mrs. J. Laing, from K. H. GIFFORD, Esq.; and 3rd, the same variety from R. W. BOWLER, Esq.

The Silver Challenge Cup for twelve blooms, distinct varieties. presented by C. J. GRAHAME, Esq., was won by Rev. A. CHURCH JOHNSON, Chapel St. Mary Rectory, Ipswich. Particularly good in this collection were Souvenir d'Elise, Captain Hayward, Cleopatra, Horace Vernet, and Catherine Mermet; 2nd, GEO. MOULES, Esq., Hitchin; and 3rd, H. P. LONDON, Esq., Brentwood. There were twelve exhibitors.

Four distinct trebles.—There were nine collections staged in this class, the 1st prize going to J. BATEMAN, Esq., Rosevale, Archway Road, London, N.; the 2nd to the Rev. R. POWLEY; and the 3rd to G. W. COOK, Esq., Finchley.

For Exhibitors who have never won a 1st prize under the N. R. S.—P. C. BURNARD, Esq., Reigate, was 1st for twelve blooms, distinct varieties, his best being Mrs. G. S. Crawford, Louis Van Houtte, Mrs. W. J. Grant, Alfred Colomb; 2nd, Rev. J. H. PEMBERTON; 3rd, Col. PITT, Maidstone.

The 1st prize for six varieties was won by E. A. MOULSEY, Esq., Stevenage.

S. MORRIS, Esq., Leicester, won a class for six blooms in not fewer than four varieties.

Among members who have joined the Society during the past year, R. BOSWELL, Esq., Hitchin, won a class for six blooms in distinct varieties.

A Suburban Class.—The Langton Memorial Cup was won by Mr. G. W. COOK, North Finchley, with a collection of six Roses, grown within 8 miles of Charing Cross. These hardy varieties may be worth giving:—Mrs. John Laing, François Michelon, Ulrich Brunner, Mrs. S. Crawford, Marchioness of Londonderry, and Heinrich Schultheiss.

Six Blooms of New Roses.—F. TATTERSALL, Esq., Morecombe, was 1st in this class, showing varieties already noticed in a similar class for nurserymen; Killarney and Ulster were best represented. C. JONES, Esq., was 2nd.

Exhibition of Roses in cases, in nine distinct varieties, seven blooms of each, and not exceeding 5 feet by 4 feet in area of tabling.—H. V. MACHIN, Esq., Gateford Hill, Worksop, was 1st with very good blooms of Mrs. J. Laing, Ulrich Brunner, Mrs. R. G. Sandford, and Mrs. W. J. Grant. Messrs. F. Cant & Co.'s piece of plate went with this prize. The Rev. J. H. PEMBERTON, Havering-atte-Bower, was 2nd with some very good blooms of Mrs. J. Laing, A. K. Williams, Caroline Testout, Marquise Litta, and Helen Keller. F. H. CAMPION, Esq., Reigate, was 3rd, his best being Mrs. W. J. Grant, Maman Cochet, Mrs. Paul, a striking light pink-coloured, flat flower; and La France.

TEAS AND NOISSETTES.

The Challenge Trophy for eighteen blooms, distinct, was won by A. HILL GRAY, Esq., Newbridge, Bath. His collection was a splendid one, and the following are the varieties:—Back row: Maman Cochet, Souvenir d'Elise Vardon, Muriel Grahame, Bridesmaid, Medea, and White Maman Cochet (very good). Centre row: Innocente Pirola, Comtesse de Nadailac, The Bride, Catherine Mermet, Madame Cusin, Cleopatra. Front row: Golden Gate, Madame C. Kuster, Ernest Metz,

Souvenir de S. A. Prince, Princess Beatrice, and Souvenir d'un Ami. The Rev. F. R. BURNSIDE, St. Margaret's Bay, Dover, was second, and included very large specimens of Maman Cochet, Cleopatra, Sylph, Madame Cusin, Medea, and Catherine Mermet. O. G. ORPEN, Esq., Colchester, who won this class last year, was 3rd. There were five exhibitors.

A. HILL GRAY, Esq., Bath, also won for twelve varieties, the best of which were Catherine Mermet, Souvenir d'Elise Vardon, Muriel Grahame, The Bride, Bridesmaid, Comtesse de Nadailac, &c.; these were splendid specimens. A. TATE, Esq., Downside, Leatherhead, was 2nd; and Rev. H. BERNERS, Ipswich, 3rd.

Mr. A. HILL GRAY was again 1st in a class for eight distinct varieties (trebles); Mr. E. M. BETHUNE, 2nd; and Rev. FOSTER MELLIER, Ipswich, 3rd.

In a class for nine blooms of any one variety, The Bride was shown best by A. HILL GRAY, Esq. Then came Catherine Mermet, from Mr. E. M. BETHUNE; and Maréchal Niel, from the Rev. A. FOSTER MELLIER.

Open only to growers of fewer than 500 plants.—The Rev. R. POWLEY, Warminster, won a class for twelve blooms; and C. JONES, Esq., Gloucester, was 2nd. A class for nine blooms distinct, was won by R. F. HOBBS, Worcester, who had Maman Cochet in very good form. Mrs. E. C. MURRAY, Ryde, was 2nd; and Mr. E. MAWLEY, 3rd.

Maréchal Niel was the best in a class for six blooms of one variety, and was shown by C. JONES, Esq., Gloucester; 2nd, Madame Hoste from the Rev. F. R. BURNSIDE, Dover.

Open only to growers of fewer than 200 plants.—Mr. WHITTY, Belgrave, Leicester, won a class for nine blooms, Maman Cochet and Comtesse de Nadailac were the best; 2nd, E. BEWLEY, Esq.; and 3rd, A. MUNI, Esq., Slough. The best collection of six blooms was from Mr. C. F. LESLIE, Hertford, and Mr. J. C. TREMAN, Swanley, had the best variety in the class for six blooms, showing Innocente Pirola.

The competition with four distinct varieties, under the same conditions as those entitled to exhibit in Division III. and IV., was rather keen, eight contestants entering for the prizes. The 1st place fell to the Rev. R. POWLEY, Warminster, Wilts, whose stand consisted of even-sized flowers, fairly perfect in form, and cut from the plants at the right moment. The best varieties were C. Mermet, The Bride, and Bridesmaid. This stand took the Piece of Plate presented by R. E. WEST, Esq., for growers of fewer than 500 Teas and Noisettes; R. F. HOBBS, Esq., of Worcester, was 2nd, with flowers of moderate size, viz., Souvenir d'un Ami, Jean Ducher, and S. A. Prince, &c., of a moderate degree of merit; Rev. R. F. BURNSIDE, St. Margaret's Bay, Dover, was 3rd with a nice stand, which included Medea, Cleopatra, and Sylph, all good.

For six blooms, in not fewer than three varieties, W. UPTON, Esq., Belgrave, Leicester, was 1st with flowers small and neat, but of equal size, the varieties being Innocente Pirola, Maman Cochet, Comtesse de Nadailac, and Cleopatra. W. WHITE, Esq., Wateringbury, Kent was 2nd with fair blooms in some cases, weak ones in others; Catherine Mermet and Medea were the finer flowers. W. WAKELEY, Esq., Rainham, was 3rd. There were five competitors.

In the class for six distinct varieties of Teas and Noisettes, seven blooms of each, O. G. ORPEN, Esq., Colchester, secured the 1st prize and a piece of plate; his stand containing some fine blooms, whilst others were decidedly weak. Souvenir de S. A. Prince, Souvenir d'un Ami, and Innocente Pirola were the superior blooms. Miss B. LANGTON, of Hendon, N.W., was 2nd, with flowers of moderate size, which showed traces of damage by rain.

PREMIER BLOOMS.

The three blooms awarded Silver Medals in the Amateur Classes were as follows: Ulrich Brunner, the best Rose other than a Tea or Noisette, and shown by Mr. G. W. COOK in his "Metropolitan" exhibit; Mrs. W. G. Grant, the best H. T., and shown by Mr. E. BEWLEY in a collection entered in class 36 for nine blooms, distinct varieties; and Muriel Grahame, the best Tea or Noisette, also exhibited by Mr. BEWLEY.

LADIES DECORATIVE CLASSES.

A competition for the best vase of cut Roses arranged with any kind of foliage, Ferns, or grasses, brought several competitors, and some graceful exhibits. 1st, Mrs. J. FEARON, Birdhurst, Reigate, with a device of pale-tinted Teas, with Rose shoots and grasses as foils to the flowers. Miss WEST, of Forth Dene, Wray Park, Reigate, was awarded the 3rd prize; here grass awns, Maidenhair Fern, and Asparagus foliage was used with the Roses, which consisted mostly of flowers of pink and crimson shades and no white.

GARDEN OR DECORATIVE ROSES.

For twelve distinct varieties, not fewer than three trusses of each. A. TATE, Esq., Downside, Leatherhead, was 1st, taking the Silver Cup presented by Miss E. A. WILLMOTT, V.M.H. These were certainly the finest lot of these Roses shown by an amateur on this occasion, and there were included Alister Stella Gray, Reine Olga de Wurtemberg, *macrantha*, W. A. Richardson, Augustine Guinoisseau, Marquis of Salisbury, Bardon Job, and Perle d'Or. O. G. ORPEN, Esq., Colchester, was 2nd, his better flowers being L'Idéal, Moschata, Marquis of Salisbury, Hebe's Lip, Ma Capucine, Bardon Job, and Gustave Regis—a group that made a showy display; and the 3rd place was taken by H. V. MACHIN, Esq., whose collection contained some very nice bunches.

The best nine distinct varieties, in not fewer than three trusses of each.—1st, Mrs. A. F. PERKINS, Oak Dene, Holmwood, this lady also taking the Girdlestone Memorial Pr

presented by the Girdlestone Memorial Fund. The exhibit consisted of massive bunches of fresh-looking flowers, including the varieties W. A. Richardson, Gustave Regis, Marquis of Salisbury, Moschata, Madame Pernet Ducher, and Meg Merrilies. The 2nd place was taken by Miss D. A. WESTFIELD, Speldhurst, with a brilliant lot, but which were far too much crowded into the glasses. Very good were Red Provence, Andersoni, Amy Robsart, Camoens, and Claire Jacquier. Miss B. LANGTON, of Hendon, was 3rd, Paul's White Pillar, The Garland, Laurette Messigny, and Camoens being her finest blooms.

The best in the class for six distinct varieties, open only to amateurs who have never won a prize for these Roses at a show of the National Rose Society.—In this competition G. W. COOK, Esq., N. Finchley, was 1st, with a showy exhibit consisting of big bunches of Rosas with rose foliage, which took also the piece of plate presented by O. G. ORPEN, Esq., for six bunches of garden Roses. E. MAWLEY, Esq., Rosebank, Berkhamsted, was 2nd, with smaller bunches that were fresh and good.

Nine distinct varieties, not fewer than three or more than seven trusses of each.—In this class H. V. MACHIN, Esq., Gateford Hill, Worsnop, was 1st, with a neat lot of vases. We remarked the varieties Rosa Mundi, striped like York and Lancaster; Gustave Regis, Paul's Single White, Madame P. Ducher, and the prettily fringed, light pink Rosa fimbriata. Rev. J. H. PEMBERTON, Havering-atte-Bower, was 2nd, having Laurette Messigny, Rosa Fissardi white, Rosa moschata, R. multiflora grandiflora, Red Damask, and Rosa alba. Mrs. A. F. PERKINS, Oak Dene, Holmwood, was awarded 3rd prize, for a pretty stand containing fine blooms of Gustave Regis, Mignonette, Claire Jacquier, fawn and white; and Madame Nutte, a pale flesh-coloured Rose, &c.

Six roses of Sweet Briars in as many distinct varieties.—F. W. CAMPION, Esq., Reigate, was 1st with an effective lot of brightly-tinted varieties, viz., Green Mantle, a vivid crimson; Jeannie Deans, semi-double, and of a deep rose tint; Anne of Gierstein, Brenda, a lovely pink, globular flower, Lucy Bertram, and Lady Penzance. H. V. MACHIN, Esq., was 2nd with large bunches of Brenda, Flora MacIvor, Meg Merrilies, bright crimson; Lady Penzance, Rose Bradwardine, and Anne of Gierstein. 3rd, G. H. BAXTER, Esq., Brentwood, with close bunches of Brenda, Anne of Gierstein, a bright pink; C. Deyton, &c.

MISCELLANEOUS EXHIBITS.

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, exhibited their "Multiflora" strain of Streptocarpus; also a grand lot of cut hardy flowers, a group of miscellaneous plants, and a group of tuberous-rooted Begonias. Messrs. R. WALLACE & CO., Kilnfield Nurseries, Colchester, had a group of hardy flowers, in which varieties of L. Thunbergianum, L. Dahlmanni, and L. pardalinum were conspicuous. Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, exhibited hardy flowers; Messrs. GEO. JACKMAN & SON, Woking, showed a quantity of exhibition varieties of Roses, Sweet Peas, and other hardy flowers; Mr. W. RUMSEY, Joyning's Nursery, Waltham Cross, Herts, showed a collection of cut Roses.

Messrs. CARTER & CO., High Holborn, London, had a nice exhibit of Gloxinias, double-flowered Petunias, and Davallia Ferns in various shapes, over a mirror which was intended to represent water.

Mr. M. PRITCHARD, Christchurch Nurseries, Hants, had a group of beautiful hardy flowers. Mr. F. G. FOSTER, Brockhampton Nurseries, Havant, showed a pretty group of Sweet Peas.

Messrs. J. PEED & SONS, Roupell Park Nurseries, West Norwood, S.E., showed a capital group of Caladiums, and flowers of varieties of Gloxinias. Mr. W. SPOONER, Arthur's Bridge Nursery, Woking, showed Roses; the more decorative varieties being very well represented. Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., exhibited hardy flowers.

NORTHERN ASSOCIATION OF SCIENTIFIC SOCIETIES.

JUNE 22.—The annual meeting of this Association was held in the Museum Buildings, Elgin, N.B., on the above date. The Banff Field Club, the Inverness Field Club, Nairn Association, and the Elgin Scientific Association, were well represented, some sixty members being present. The members were received by Colonel Culbard (President) and the Directors of the Elgin Association in the Elgin Museum, and were accorded a hearty welcome, Colonel Culbard presiding.

From the report, which was read by Mr. R. B. Gordon, it appeared that nearly twenty years have elapsed since the Northern Association met for the first time, and there were many new members who were not aware of the origin of the Association and its aims. The first meeting was held in Elgin in 1881; in 1887 the Northern Association was constituted, and a meeting was held in Elgin. That was the first meeting the *Transactions* of which were published. Since then eleven meetings have been held, at which seventy papers were read, forming two volumes of *Transactions*. Those who took any interest in these publications, would agree that the money was well spent. They had brought together sixty-four papers, which were all the result of original research; together with four lists of plants, and two of birds. The *Transactions* of the present meeting would constitute the first part of the third volume. When these meetings began, and for some years afterwards, no fewer than ten different societies took part in sending delegates. Now they had only four societies represented in the Union. The decline was due, he said,

not for want of work, but for want of workers. At that time, every village had its field club, which continued as long as the leading spirits remained in the district, but when they removed, the societies died for want of others to take up the work. This should teach them never to miss an opportunity of interesting the younger members of the community in the work. He hoped the four societies constituting the Association would continue vigorous for years to come. They had four botanical lists—Alford, Nairnshire, Ardelach, and Ainess. He had succeeded in making a beginning among the birds, but what of the insects and fishes? He would suggest that this work be started in each Association, and that at least they would have one list in each of these departments by the time they met next year in Banff. He would specially urge upon the clergymen and schoolmasters to take up some part of the work in their districts. Gardeners and gamekeepers could render valuable assistance in the departments of botany and natural history. He had had the privilege of introducing several of these men to study, and more successful students no one could wish.

Papers were read by Dr. Traquair, F.R.S., on "Recent Advances in our Knowledge of the Fish Fauna of the Upper Old Red Sandstone of the Moray Firth Area;" Mr. John Horne, F.R.S., of the Geological Survey of Scotland, on "The Bearing of Recent Palaeontological Discoveries on the Relations of the Upper and Middle Divisions of the Old Red Sandstone North of the Grampians." Mr. W. Campbell Glen-glass, on "Plants in the Parish of Ainess;" Mr. R. Thomson, Ferness, on "Some Curiosities of our Local Insects," and several others.

An interesting and instructive sederunt was brought to a close with the usual votes of thanks; after which the members dined together at the Grand Hotel, Elgin.

READING & DISTRICT GARDENERS' MUTUAL.

THE July meeting of this body of gardeners was held in Messrs. Sutton & Sons' trial grounds on Monday evening last, when nearly 100 members assembled to hear a paper on the "Sweet Pea," by Mr. G. Stanton, of Park Place Gardens, and at the same time to inspect the 244 varieties of this popular annual Messrs. Sutton are growing this year. Mr. Stanton, in introducing the subject, remarked that Sicily is said to be the native home of the Sweet Pea, from whence it was introduced in 1700. We are now keeping its bi-centenary, and therefore the year 1900 must be a very memorable one in the history of this, one of the most beautiful of all annuals. We hear little or nothing about the Sweet Pea from 1700 until 1731, when Philip Miller mentions it in his *Gardeners' Dictionary*. In Mawe's *Gardener*, published in 1800, five varieties are mentioned; this shows the position of the Sweet Pea at its centenary. A striped variety was mentioned by Page in 1817, bringing the number up to six, and as only six were known in 1842, no addition was made for twenty-five years. In 1860 nine varieties were recorded, and about 1865 the invincibles came out. During the year 1878 or 1879 the great improvement in Sweet Peas began; whilst in 1890 this flower was taken up in America, and soon became very popular. The lecturer briefly touched upon the culture, then passed on to note some of the peculiarities about Sweet Peas, such as are found amongst the blooms, seeds, &c., and also the adaptability of the flowers for the decoration of the house and table. Referring to varieties, it would be too great a task even to describe the best of them, but he would name the following as a few of the very best that would not disappoint any who may feel disposed to try them, viz., Blanche Burpee, Prince Edward of York, Black Knight, Lady Griseld Hamilton Prima Donna, Salopian, Navy Blue, Gorgeous, Gala Beauty, Mrs. Dugdale, Duke of Westminster, Duke of Edinburgh, and Emily Eckford. Mr. Stanton illustrated his lecture in a forcible manner by some splendid bunches of the varieties he referred to.

On the proposition of Mr. Woolford, seconded by Mr. Neve, a hearty vote of thanks was accorded to Mr. Stanton for his interesting paper, and to Messrs. Sutton & Sons for so kindly allowing them to hold the meeting in their grounds, and for their hospitality.

WOLVERHAMPTON FLORAL FÊTE.

JULY 10.—The twelfth annual Horticultural Fête was held in the West Park on the above date in ideal weather.

From the first year of the Wolverhampton Show, its progress has been one of practically unbroken success. Under the management of a vigorous and progressive committee, of which Mr. S. Dickinson has been Chairman, the schedule of the show has been enlarged year after year, the prize money has been increased, until for the present show, the total amount of prize money in the horticultural section alone has reached the handsome sum of £700. Inducements have therefore been offered to the best growers to bring their finest productions. The Wolverhampton Show has not only become an established institution, but it is bidding vigorously for absolute pre-eminence.

As in previous years, Mr. W. E. BARNETT is the general secretary.

Special features were made this year of Orchids, floral displays, and herbaceous flowers, and in each of these classes the result was quite satisfactory.

GROUPS.

The greatest feature at this as at most other similar shows was the tent devoted chiefly to the class for open groups of plants

arranged for effect. In this class, not only do the exhibitors bring out their best specimens of the horticulturist's art, but by the competition in skilful arrangement the prettiest and most striking effects are produced. This year the groups were one short of the number shown last year, but though there was thus a slight falling off in number, the character of the three exhibits was of high quality. Mr. CYPHER was 1st with a very fine group, most artistically arranged with fine Palms, and such Orchids as Cattleyas, Odontoglossums, Epidendrums, and other varieties intermixed with many species of fine-foliage plants, Ferns, &c., some nice plants of *Humea elegans* affording to the whole with striking effect. G. H. KENDRICK, Esq., Edgbaston (gr., Mr. Macdonald), was 2nd with a very fine and beautifully-arranged group. Mr. VAUSE, Leamington, was 3rd, with a pleasing group of excellent plants.

Some very nice groups were put up in the smaller classes by gentlemen's gardeners and amateurs.

A very fine collection of Caladiums, Cannas, Ferns, tuberous-rooted Begonias, &c., was shown by Mr. WEBSTER, the superintendent of the Park, which deserved the Commendation and the Gold Medal which were awarded.

STOVE AND GREENHOUSE PLANTS.

Mr. CYPHER won 1st prize in the principal class, having undoubtedly the best collection of these plants, including Palms, good specimens of Codiaeums, Stephanotis floribunda, a splendid plant of *Phenocoma prolifera* Barnesii, &c.; and some excellent Ixoras, Ailmandas, Bougainvilleas, and Ericas; Mr. VAUSE was 2nd with a good collection; and Mr. FINCH 3rd.

ROSES.

Cut blooms were well shown, and the competition in most classes was close. Messrs. DICKSON & SONS, Newtownards, Co. Down, were well 1st for seventy-two distinct varieties, including most of the best ones; Messrs. B. R. CANT were 2nd.

Messrs. DICKSON were 1st for forty-eight varieties, distinct, with splendid blooms; Messrs. TOWNSEND, 2nd; Messrs. D. PRIOR & SON, 3rd.

Messrs. DICKSON & SONS were 1st for eight varieties, three blooms of each; Mr. JOHN MATTOCK, Oxford, was 2nd; and Mr. B. R. CANT, Colchester, 3rd.

The best twelve bunches of Roses were shown by Mr. J. MATTOCK, 1st; Messrs. TOWNSEND & SONS, 2nd; Mr. J. H. WHITE, Worcester, 3rd.

MISCELLANEOUS.

Messrs. VEITCH & SONS exhibited a very fine group of plants, to which a Gold Medal was awarded.

Mr. WHITE, of Worcester, won the Wolverhampton Silver Challenge Casket, value £25, and £5 in cash, for the best floral displays; Mr. J. C. KNIGHT, of Wolverhampton, was 2nd. Messrs. DICKSON, of Chester, the winners at last year's show, did not compete, but had a very fine bank of hardy flowers.

The 1st prizes for three classes of bouquets were awarded to Messrs. JENKINSON & SON of Newcastle-under-Lyne; and Messrs. PERKINS of Coventry were 2nd. Messrs. JENKINSON were 1st for dinner-table decoration.

Mr. JONES of Shrewsbury had a very fine exhibit of Sweet Peas, which easily won the Gold Medal offered for the best exhibit; Messrs. HINTON BROS. showed a very fine collection of Sweet Peas, in which many new varieties were remarked; and Mr. R. SYDENHAM contributed a good collection.

A group of double-flowered tuberous-rooted Begonias, having the finest blooms ever seen at Wolverhampton, was shown by Mr. DAVIS, of Pershore, which was worthy of the highest commendation, and to which a small Gold Medal was awarded.

Messrs. WEBB & SONS, Wordsley, Stourbridge, exhibited Gloxinias and Begonias very finely, and their exhibit also included Sweet Peas and a collection of vegetables (Gold Medal).

The exhibits in the Cottagers' classes, as a rule, were excellent, and the exhibits of wild flowers, in which rivalry was very keen indeed, were of much interest; and the classes in which special prizes were given to school children for twelve named wild flowers were instructive. The different plants were correctly named in the vernacular and botanically; and in some exhibits the natural order was appended.

FRUIT.

The show of fruits in season was excellent, and the competition close. Among Grapes were fine bunches of Muscat of Alexandria, Madresfield Court, and Black Hamburgh.

Some fine Peaches and Nectarines were shown, also Melons and Strawberries. The principal exhibitors were Lord SAVILLE, Rufford Abbey, Notts; The Earl of LATHOM, Ormskirk, Lord BAGOT, The Earl of HARRINGTON, H. FRANCE HAYBURST, Esq., and J. CORBET, Esq.

VEGETABLES.

Some very fine collections were exhibited for the prizes given by the Society, and also for those given by the different seed firms. J. W.

SWANSEA HORTICULTURAL.

On Thursday, July 5, the members of the Swansea Horticultural Society, to the number of forty, paid a visit to Margam Abbey, the residence of Miss Talbot, one of the most interesting in Wales.

After a very enjoyable visit, the party returned to the Talbot Arms Hotel to tea, under the chairmanship of Mr. W. Newcombe. Votes of thanks were accorded to Miss Talbot for permission to visit the gardens, and to Mr. L. Milner, the head gardener at Margam, for his kindness in conducting the party round the gardens and pleasure-grounds.

MISCELLANEOUS SOCIETIES.

Croydon and District Horticultural Mutual Improvement.—The monthly meeting was held at the Society's Room at the Sunflower Temperance Hotel, on Tuesday, June 19. Mr. W. Harris occupying the Chair; Mr. W. J. Simpson, the Vice-Chair. A large attendance of members was present, and six new members were nominated. The Chairman introduced Mr. W. J. Jarman, one of the younger members, who read a capital and instructive paper on "Carnations," dealing very lucidly with the classification, as bivarres, flakes, Malmaisons, &c., soils, propagation by layers and pipings. Cultivation in open borders, potting and indoor culture, and suitable structures, were next treated upon; insect pests and diseases were also dealt with. The subject was made interesting by the exhibition of some fine varieties of Carnations, sent to the meeting by Mr. H. T. Dixon, of Hailsham, and Mr. T. Butcher. A hearty Vote of Thanks was accorded Mr. Jarman for his paper. The Chairman then announced that at the next meeting in July an exhibition of Sweet Peas will be held, when ladies will be invited.

Isle of Wight.—The Isle of Wight Rose Society held their annual exhibition of Roses in the Esplanade Gardens, Ryde, on Thursday last, June 28. The opening ceremony was performed by his Worship the Mayor of Ryde (J. JAMES, Esq., J.P., C.C.). The most successful exhibitors in the open classes were Messrs. B. R. Cant, F. Cant, and D. Prior; in the Isle of Wight classes, Mrs. E. Croft-Murray almost swept the board, securing the new Silver Challenge Cup, the Queen's Gold Medal, the Bronze Medal for the best H. P., and the Isle of Wight Hort. Imp. Assoc. Certificate, besides a large number of money-prizes. The other successful exhibitors were Rev. J. E. Jeans, Rev. J. Shearme, Rev. A. T. Richardson, Miss G. Carter, Mrs. Hutt, Mrs. Mainwaring, Mrs. Kent, Miss Miller, and Messrs. J. O. Brook, J. Lee-White, J. Williams, C. Pince, J. Leek, J. Attrill, and B. H. Bullock. The show was of exceptional merit, and was well patronised. The arrangement and management of the show reflect great credit to the abilities of the Hon. Secretaries, Rev. J. E. Jeans and Mr. E. V. Matthews.

Shirley Gardeners' Mutual Improvement Association.—The monthly meeting of the above Society was held at the Parish Room, Shirley, Southampton, on Monday, June 18. Mr. B. Ladhams, F.R.H.S., presiding over a very fair attendance. The lecturer for the evening was Mr. H. J. Jones, F.R.H.S., of the Ryecroft Nurseries, Hither Green, Lewisham, who gave an instructive lecture on the "Culture of Pelargoniums." There was a good exhibition of plants, fruit, and flowers.

Bristol and District Mutual Improvement.—The monthly meeting was held at St. John's Parish Room, Redland, on Thursday, June 28. A good attendance was presided over by Mr. A. J. Hancock. Mr. W. Staddon, of Cote House, read the paper on the cultivation of "Strawberries in Pots." A discussion followed, and Mr. Staddon was heartily thanked for his paper.

Birmingham and District Amateur Gardeners Association.—The members of the Birmingham and District Amateur Gardeners' Association had their eighth annual excursion on Saturday, June 30, when through the kind permission of Lord LEIGH, the gardens and grounds of Stoneleigh Abbey, Kenilworth, were visited. Under the guidance of the head gardener, Mr. H. T. Martin, the party were conducted through the numerous Vineries, Peach-houses, and Greenhouses, Kitchen Garden, &c.

MARKETS.

COVENT GARDEN, JULY 12.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day but often several times in one day. Ed.]

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, Tasmanian (various sorts) cases ...	7 0-10 0
Apricots, box ...	1 6-2 0
— sieve ...	5 0-8 0
Bananas, bunch ...	6 0-10 0
Cherries, English, per sieve ...	2 6-8 0
— red, sieve ...	3 0-5 0
Figs (New), per doz. ...	2 0-3 0
— in bks., Spanish ...	2 6-3 0
Gooseberries, sieves ...	1 0-1 6
Grapes, Hamburgh, new, per lb. ...	0 9-2 0
— Alicante ...	1 0-1 6
— Colmar ...	1 9-2 0
— Gros Maroc, per lb. ...	1 6-1 9
— Muscats, A., lb. ...	2 0-2 6
— B., per lb. ...	1 3-1 6
Grapes, Belgian, lb. ...	0 10-2 0
Lemons, case ...	14 0-16 0
Melons, each ...	1 3-2 0
— Foreign rocks ...	1 6-3 0
Nectarines, per doz. ...	1 6-8 0
Class A ...	2 0-5 0
Class B ...	12 6-15 0
Oranges, Murcia, p. case ...	10 0-12 0
— Peaches, per dozen ...	2 0-4 0
Class A ...	3 6-6 6
Class B ...	5 0-6 0
Pines, each ...	2 6-6 6
Plums in sieve ...	5 0-6 0
— in baskets ...	2 6-6 6
Raspberries, punnets, doz. ...	3 0-5 0
— cwt. ...	23 0-28 0
Strawberries, 12 lb. ...	3 0-6 0
— English, pecks ...	2 6-5 0
— punnets, doz. ...	6 0-12 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Acacias, per dozen ...	12 0-18 0
Adiantums, p. doz. ...	5 0-7 0
Arbor-vitæ, var. doz. ...	6 0-36 0
Aspidistras, p. doz. ...	18 0-36 0
— specimen, each ...	5 0-10 0
Crotons, per doz. ...	18 0-30 0
Cyclamens, per doz. ...	8 0-10 0
Dracenas, var., per doz. ...	12 0-30 0
— viridis, per doz. ...	9 0-18 0
Ericas, var., per doz. ...	12 0-36 0
Eucynus, various, per dozen ...	6 0-18 0
Evergreens, var., per dozen ...	4 0-18 0
Ferns, in variety, per dozen ...	4 0-18 0
Ferns, small, per 100 ...	4 0-6 0
Ficus elastica, each ...	1 6-7 6
Foliage plants, var., each ...	1 0-5 0
Genistas, per doz. ...	6 0-9 0
Lily of Valley, each ...	1 9-3 0
Lycopodiums, doz. ...	8 0-4 0
Marguerite Daisies, per dozen ...	8 0-12 0
Myrtles, per dozen ...	6 0-9 0
Palms, various, ea. ...	1 0-15 0
— specimens, each ...	21 0-68 0
Pelargoniums, scarlet, per dozen ...	8 0-12 0
— ivyleaf, per doz. ...	8 0-10 0
Spiræas, per dozen ...	6 0-12 0

OUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arums ...	1 6-2 6
Asparagus "Fern," bunch ...	2 0 2 6
Carnations, per doz. blooms ...	1 0-2 0
Cattleyas, per dozen ...	9 0-12 0
Eucharis, per dozen ...	3 0-5 0
Gardenias, per doz. ...	1 0-2 0
Gladioli, scarlet, per dozen ...	3 0-5 0
— white, per doz. ...	3 0-5 0
Lilium Harrisi, per dozen blooms ...	2 0-3 0
Lilium lancifolium album, doz. blms. ...	4 0-8 0
Lilium rubrum, doz. ...	4 0-8 0
Lilium longiflorum, per dozen ...	2 0-3 0
Lily of Valley, per doz. bunches ...	6 0-18 0
Maidenhair Fern, per doz. bunches ...	4 0-8 0
Marguerites, p. doz. bunches ...	8 0-6 0
Mignonette, dozen bunches ...	4 0-6 0
Odonoglossums, per dozen ...	3 0 6 0
Roses, Red, per dozen ...	1 0-4 0
— Tea, white, per dozen ...	2 6-4 0
— Safrano, per doz. ...	2 0-8 0
— Marchal Niel, per doz. ...	4 0-8 0
— Catherine Mermet, per dozen ...	2 0-5 0
Smilax, per bunch ...	4 0-5 0
Taberoses, per doz. blooms ...	0 9-1 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz. ...	1 6-2 0
Beans, Channel Islands, per lb. ...	0 8-1 0
— Broad, or home-grown, per bushel ...	3 0 —
— English Dwf. per lb. ...	0 8-1 0
Beetroots, New, per bunch ...	6 0 —
Cabbages, tally ...	2 0-3 0
— dozen ...	0 6-0 9
Carrots, new, per dozen ...	1 6-2 6
Cauliflowers, per dozen ...	2 0-3 6
Cress, per dozen punnets ...	1 6 —
Cucumbers, doz. ...	1 6-3 0
Endive, new French, per dozen ...	1 6 —
Garlic, new, dozen bunches ...	2 0 —
Horseradish, English, bundle ...	1 6 —
— foreign, per bundle ...	0 10-1 0
— loose, per doz. ...	1 0 —
Leeks, per dozen bunches ...	2 0-2 6
Lettuce, English Cabbage, bush. ...	1 0 —
— English Cos, per score ...	0 6-1 6
Mint, new, p. doz. bunches ...	2 0 —
Mushrooms, house, per lb. ...	0 4-1 0
— Outdoor, sieve ...	2 0 —
Onions, picklers, per sieve ...	3 6 —
— Egyptian, per cwt. ...	4 6 —
— Green, dozen ...	1 6-2 6
Parsley, 12 bunches per sieve ...	0 9-1 0
Peas ...	3 0-4 0
— English, per bushel ...	2 6-4 0
— in bags ...	3 6-4 6
Potatoes, New Channel Is. lands, per cwt. ...	5 0-6 0
— English, new, Bedfords, cwt. ...	6 0-6 6
Radishes, dozen ...	1 6 —
Salad, small, punnets, per dozen ...	1 3 —
Shallots, new, per dozen bunches ...	1 6-2 0
— new, per lb. ...	0 3-0 4
Spinach, Spring, per bushel ...	1 6-2 0
Tomatoes, English, new, per 12 lb. ...	3 0-4 6
— Channel Islands, per lb. ...	0 3-0 4
Turnips, new, per dozen ...	5 0-7 0
Vegetable Marrows, per dozen ...	3 0-5 0
Watercress, p. doz. bunches ...	0 4-0 6

REMARKS.—Foreign Apples are nearly over for the year, only a few Tasmanians being on sale. The influx of Strawberries is now declining; Pineapples are a very short supply; Potatoes are coming in of a very good quality, and prices have a downward tendency.

POTATOS.

Cherbourg, 7s. per cwt.; Bedfords, 5s. 6d. to 6s. 6d. per cwt. John Bath, 32 & 34, Wellington Street, Covent Garden.

FRUIT AND VEGETABLES.

GLASGOW: July 11.—The following are the figures current since our last report:—Gooseberries, Dutch, £4 to £4 10s. per ton; English do., £6 to £6 10s. do.; Cherries, French, 5s. to 7s. half-sieve; do., case, 2s. 6d. to 2s. 9d. do.; pads, 2s. 9d. to 3s. 6d.; do., English, 4s. 6d. to 6s. 6d. half-sieve; Strawberries, Cornwall, 2s. to 3s. 6d. per dozen punnets; do., Southampton, 1s. 6d. to 2s. per basket; Kent pecks, 3s. 6d. to 5s.; do., Scotch, 5s. to 6s. per dozen pounds; Cucumbers, 3s. to 4s. per dozen; Apricots, 4d. to 5d. per pound, and 1s. to 1s. 3d. per box; do., Italian, 3s. to 4s. per basket; Tomatoes, Scotch, 8d. to 10d. per pound; Guernsey, ordinary, 3½d. to 4½d. do.; do., smooth, 5½d. to 6½d. do.; do., French, 4s. 6d. to 5s. per crate; Grapes, English, 1s. 3d. to 1s. 9d. per pound; do., Belgian, 9d. to 10d. do.

LIVERPOOL: July 11.—Wholesale Vegetable Market. —Potatoes, per cwt.: Early Regents, 5s. 6d. to 6s. 6d.; Jerseys, 7s.; Kidneys, 7s. 6d. to 10s.; new, 1s. 6d. to 1s. 10d. per 21 lb.; Onions, foreign, 2s. 9d. to 3s. 6d. per cwt.; Parsley, 4d. to 8d. per dozen bunches; Lettuce, 4d. to 9d. per dozen; Cucumbers, 1s. 8d. to 3s. per dozen; Cauliflowers, 1s. to 2s. do.; Cabbages, 8d. to 1s. 3d. do.; Peas, 3s. to 3s. 6d. per bushel. St. John's: Potatoes, 1s. 2d. per peck; do., new 1½d. per lb.; Asparagus, 1s. 6d. to 2s. 6d. per 100; Cucumbers, 4d. to 6d. each; Cherries, 6d. to 8d. per lb.; Apricots,

1s. 6d. per doz.; Gooseberries, 2d. per lb.; Peas, 1s. 3d. to 1s. 6d. per peck; Currants, red, 6d. lb.; do., black, 6d. lb.; Grapes, English, 1s. 6d. to 2s. per lb.; Pines, English, 4s. 6d. each; Strawberries, 6d. to 8d. per lb.; Mushrooms, 1s. to 1s. 2d. do. Birkenhead—Potatoes, new, 1d. per lb.; Peas, 10d. to 1s. 4d. per peck; Cucumbers, 2d. to 6d. each; Strawberries, 6d. to 8d. per lb.; Currants, black, 6d. to 8d. do.; do., red, 4d. to 6d. do.; Apricots, 1s. per dozen; Cherries, 4d. to 8d. per lb.; Gooseberries, 1½d. per quart; Grapes, English, 1s. 6d. to 3s. per lb.; Mushrooms, 8d. to 1s. do.; Peaches, 2d. each.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending July 7, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.		1900.		Difference.	
	s.	d.	s.	d.	s.	d.
Wheat	25	7	27	10	+	2 3
Barley	21	9	22	10	+	1 1
Oats	18	1	19	5	+	1 4



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period July 1 to July 7, 1900. Height above sea-level 24 feet.

1900.	July 1 10 July 7.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			
			At 9 A.M.				At 1-foot deep.			
			Dry Bulb.	Wet Bulb.	Highest.	Lowest.	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.	LOWEST TEMPERATURE OF GRADE.
SUN.	1	W.S.W.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.
MON.	2	S.S.E.	64.4	55.3	65.0	56.8	0.09	62.2	59.5	56.1
TUES.	3	S.E.	58.9	55.7	64.1	54.8	0.16	61.9	59.6	56.3
WED.	4	N.W.W.	61.5	54.7	67.2	53.4	0.22	61.5	59.6	56.4
THU.	5	N.N.E.	60.7	55.0	69.9	49.5	...	61.9	59.8	56.5
FRI.	6	S.S.W.	60.4	58.0	75.0	48.9	...	63.5	60.2	56.6
SAT.	7	N.N.W.	60.5	52.9	65.8	56.8	0.02	64.1	60.5	56.8
SAT.	7	N.N.E.	58.8	49.8	63.5	49.5	...	62.7	60.8	56.9
MEANS...	...	...	60.7	54.5	67.3	52.8	Tot.	0.49	62.5	60.0

REMARKS.—The weather during the first part of the week was very unsettled, with a thunderstorm on the 3rd inst. The wind was very cold and strong every day.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending July 7, is furnished from the Meteorological Office:—

"The weather during this period varied greatly. Some rain fell almost daily in the west and north, but in the south and south-east it was generally confined to the earlier half of the period; considerable intervals of sunshine were experienced in all parts of the kingdom. Thunderstorms, accompanied by hail, occurred over the south and south-east of England on Tuesday, and again in the east and south-east on Friday.

"The temperature was again below the mean, the deficit ranging between 1° and 2°. The highest of the maxima were recorded on the 5th, when they varied from 75° in 'England, S.' and 74° in 'England, E.' and the 'Midland Counties,' to 66° in 'Scotland, W.' and the 'Channel Islands.' During the greater part of the week the daily maxima were considerably below 70°, and at some northern and north-western stations, they were sometimes below 60°. The lowest of the minima were registered as a rule on the 4th, and varied from 37° in 'Scotland, N. and E.' and 41° over the 'Midland Counties,' to 48° in 'England, E.' and 53° in the 'Channel Islands.'

"The rainfall exceeded the mean in 'Scotland, N.,' 'England, N.E.,' and the 'Channel Islands,' and just equalled it in 'Scotland, E. and W.,' 'England, E.,' and 'Ireland, S.' in the other districts it was less than the normal.

"The bright sunshine was fairly abundant over the Kingdom as a whole, and in most districts exceeded the mean. The percentage of the possible duration ranged from 50 in 'England, S.W.,' and 45 in the 'Channel Islands,' to 34 in 'England, N.E.,' and to 23 in 'Scotland, N.'"

CANADIAN TENDER FRUITS.—There would appear to have been some misunderstanding as to the cessation of shipment per cool storage, but an application to the Agricultural Department at Ottawa has put matters straight. Mr. J. W. ROBERTSON, the Commissioner of Agriculture and Dairying, under date June 26, reports that it has not been decided to discontinue the shipment of tender fruits to Great Britain. The experience of the past three years has, he says, been such as to show that a very profitable business can be done in the shipment of tender varieties of Apples and also of Pears, when carried in cold storage on steamships. The Department undertook to take charge of trial shipments of tender fruit for three years—1897 to 1899. Hereafter the growers and exporters of these fruits propose to continue the exportation themselves; that is as it was at first intended. The Department guaranteed nett returns of the full value of the fruit at Grimsby, Ontario. Notwithstanding the fact that some of that fruit was of small size, and did not strike a very good market, the bulk of the Pears was so excellent, and sold at such good prices, that the nett returns, after deducting all expenses, were only 3d. per case at Grimsby less than the price guaranteed by the Department.

PRODUCTION OF PRUNES IN CALIFORNIA.—From a governmental, and therefore trustworthy source, we learn that the Prune harvest of California last year was 110,000,000 lb. Of that crop some 7,000,000 lb. still remain on hand. The preliminary estimate points to a crop for the present year of about 125,000,000 lb.

ANSWERS TO CORRESPONDENTS.

APPLE SHOOTS: *J. M. Plymton.* Unless the foliage has been injured by frost, we cannot suggest the cause.

BOOKS: *H. J. B.* The book from which Mr. Watson in his "Orchids and their management" quoted, is entitled *About Orchids*, by Mr. Frederick Boyle; published by Messrs. Chapman & Hall, Ltd., London, in 1893. The paragraph is to be found on p. 56.—*G. R. M.* Milner's *Art and Practice of Landscape Gardening* (Simpkin Marshall & Co., London).—*J. W. S.* We know of no work specially treating of the Auricula.

CHANGE OF OCCUPATION: *J. T. C.* Take service with a market cultivator for a couple of years or longer, if an insight into fruit cultivation is desired, before starting into business for yourself. Study all aspects of the business, and do not be in a hurry to launch out as a cultivator before a good knowledge of the business is acquired, as well as an acquaintance with the ways of market-salesmen, market-customs, and methods. Two years is but a short time in which to acquire the essentials of a fruit-grower or Tomato-cultivator.

CORRECTION: HANLEY SHOW.—Messrs. J. Peed & Son's group of Begonias: for Silver Medal read Gold Medal.

CUCUMBER: *Anxious.* The roots are badly attacked with eel-worm. Burn the plants. Turn out the soil, and get fresh loam which has been stacked for a year or two.

DAFFODILS: *Z.* Unless you can mix a considerable body of stiff loam with your sandy soil the bulbs will do no good. Daffodils like a compact, stiffish soil, and but little manure, and that in a much decayed state. Unless the land is water-logged it is useless labour to throw out deep alleys between the beds.

FAIRY RINGS ON THE LAWN: *A. B.* Apply lime and potash to the patches, or rather to the outer ring of these, the central parts being no longer capable of supporting the toadstools, owing to the exhaustion of the nitrogen in the soil by previous crops of them.

FERNS INJURED: *A. K.*, 110. Some varieties of market Pteris are very apt to turn brown in places on the fronds. Most of them may be so affected by strong sunlight, after a protracted dull period such as we have this year experienced.

Fumigating with material containing chemicals may also cause similar damage. Usually the plants make good fronds later in the season.

FIGS: *J. H. W.* See the article in last week's issue.

GRAPES SPOTTED: *Lane, H. Law, G. H., and Anxious.* The injury is due to *Glaesporium*, very often mentioned lately in the *Gardeners' Chronicle*. The disease is due to a fungus marked by a depression in the skin of the fruit. For remedies see our issue for June 30, 1900, p. 419.

INSECTS: *W. B.* Probably the grubs of a Cockchafer. Do not destroy your starlings, blackbirds, and similar insect-eating birds. It is the wanton destruction of these that disturbs the balance of Nature, and permits such insects to become more and more numerous.

LADY GARDENERS: *E. K.* There are several nurseries or rather market gardens managed by ladies, and we believe with satisfactory results to the proprietors. The results of inaugurating colleges for female students are likewise such as warrant their extension.

LARCH DISEASED: *R. P.* The twigs are attacked by the Larch aphid (*Chermes laricis*), and at present many of the dark-coloured wingless young may be seen as dark specks on the foliage. Young trees suffer most, and of late complaints become more and more frequent. The leaves and green twigs are pierced by the suckers of the young insects to extract nutriment. A characteristic symptom of the attack is that many leaves show a sharp elbow bend, and soon drop off; the bend is caused by the extraction of sap at the bent part of the leaf, which then dries up and falls. Miss Ormerod (*Manual of Injurious Insects*, 2nd edition, p. 220) suggests as remedies: dilute paraffin, a wineglassful in each watering-can full of water; syringing with lime-water; some of the washes used for hop-aphis.

LEAF MINING GRUB: *A Subscriber.* Nipping the grubs with the thumb nail and removing badly injured leaves and burning them, are the only remedies. No insecticide is of any use: perhaps Quassia-water sprinkled over the foliage would deter the fly, *Tephritis onopordinis*, from laying its eggs.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*B. C.* 6, *Eriophyllum cæspitosum*, Dougl. *A. B. R.*—*J. McK.* *Lælia purpurata*.—*C. L. M.* *Phacelia* (or *Eutoca*) *viscida*.—*Mr. & Mrs. M. G.* *Calycanthus floridus*.—*J. B.* 1, *Chrysanthemum lacustre* (no flowers); 2, probably *Sedum telephium* (but it has no flowers); 3, *Tanacetum* (no flowers); 4, *Cerastium tomentosum*; 5, *Polemonium coeruleum*; 6, *Viburnum Lantana*.—*C. E.* 1, *Saxifraga hypnoides*; 2, *Sedum rupestre*; 3, *S. spurium*; 4, *S. recurvum*; 5, *S. rupestre*; 6, *S. Rhodiola*.—*Mrs. Burke.* *Rosa multiflora* (Thunb.). *W. T.* 1, *Campanula grandis* (Fisch & Meyer), (= *C. latiloba*, D. C.); 2, *Galactites tomentosa*, Moench; 3, *Sidalcea malvaeflora*; 4, *Geum rivale* (Linn.); 5, *Dianthus deltoideus* (Linn.); 6, *Streptosolen Jamesoni*.—*K. & S. L.* 1, *Anomatheca cruenta* (Lindl.); 2, *Helichrysum plicatum* (D. C.).—*G. R. M.* 1, *Iris germanica*; 1, *Campanula patula*; 2, *Campanula glomerata*; 3, *Campanula Portenschlagiana*; 4, *Veronica Teucrium*; *Aubrietia deltoidea*; 1, *Saxifraga hypnoides*.—*W. W.* 1, *Lychnis dioica*; 2, *Agathe celestis* probably, send when in flower.—*J. Williams.* *Lycaste* (*Maxillaria*) *aromatica*.—*Captain S. S.* The white flower is *Brassavola lineata*, a rather rare species; the other, an accidental variation of *Cattleya Warscewiczii*. Probably the purple markings on the petals will not appear next year.—*Cattleya*. The large flower is a very fine form of *Cattleya Warscewiczii*, which is often called *C. gigas*. The other *Selenipedium* × (*Cypripedium*) *leucorhodon*.—*E. S. R.* 1 & 2, *Carpinus Betulus* (Hornbeam); 3, *Sanicula europea*; 4, *Anchusa italica*; 5 and 6, *Geranium sanguineum* var.—*J. H.* *Syringa Josekxa*, *Lycaste Skinneri*.—*J. F.* *Prenanthes purpurea*.—*Fota.* *Pittosporum undulatum*.

PASSAGE TO CANADA OR AUSTRALIA: *E. P.* We would advise you to communicate with the Young Men's Christian Association. A letter addressed to the Secretary, Exeter Hall, Strand, would reach him.

PEACH LEAVES WITH HOLES: *J. M. Plymton.* The leaves are riddled by the "shot-hole fungus," (*Cercospora circumscissa*). Spray with ammoniacal solution of copper carbonate, and repeat at intervals. The Bordeaux Mixture is harmful to Peach leaves.

PEACH TREES DROPPING THEIR BLOSSOMS AND GROWING VERY LATE IN THE YEAR: *A Subscriber.* Cannot the flow and return pipes from and to the other house be diverted so as not to pass through the Peach-house? The long continued heat from the apparatus is the cause of late and immature growth, and the loss of bloom in the spring. The rank growth of shoots is occasioned wholly, or in part by lack of a check that a crop of fruit would afford. It would however be advisable to make an examination of the roots, pruning and lifting them if necessary, i.e., if they have gone deep into the border.

PEAS: *J. M. Plymton.* Your Peas are attacked with the same fungus as that mentioned in our last issue, p. 20, in a reply to "Subscriber." Remove diseased plants at once.

STRAWBERRIES WITH PROMINENT SEEDS: *B. & Sons.* We cannot say exactly what has caused your Strawberries to develop unusual fruits. There are always a few plants in a collection that have a tendency to do this. Is the condition general in your case?

THE CRACKING OF THE STONES OF THE PEACHES: *R. H.* Let the soil be kept uniformly moist; and to enable this to be done, the border must be provided with perfect drainage, if souring of the soil is to be averted. It is by allowing the soil to get very dry, and then deluging the border with water when growth of leaf and shoot is at a stand-still, that is, during the formation of the stone (seed), namely six weeks, that splitting is brought about.

TOMATO-PLANTS DISEASED: *John S., Aymer, and M. B.* The fungus which causes the sleepy disease of Tomato is abundant on the plant received. This was described in this paper on June 8, 1898; see also p. 419 of the last volume. The fungus enters by the roots, hence, spraying is not likely to be successful. Remove diseased plants, and mix the top-soil with fresh quicklime; or top-dress it with some fungicide, such as "Velthea."

VINE ROOTS: *H. A.* The soil sent, like that of many inside borders, has become inert and incapable of maintaining a Vine, or, indeed, any plant in health. This deterioration of the soil inside of a vinery cannot be averted for any great length of time. You will have to make a new border of good turfy loam chiefly, together with charcoal, special chemical Vine-manure, $\frac{1}{2}$ -inch bones, and lime-rubble. The border should be made piecemeal fashion, using newly-cut turf, which need not be chopped finely; and it must be well drained with rubble, overlying common drain-pipes.

VINE-WOOD DYING: *H. Law.* The death of the Vines has been brought about by the making of Mushroom-beds on the border, and thus depriving the roots of air—in fact, suffocating them.

VIOLET LEAVES BROWNED: *S. Gordon.* Burning by sudden bursts of sunshine whilst the leaves were wet, the effect of which was the more severe because of the partial shade in which the plants are growing.

COMMUNICATIONS RECEIVED.—Prof. Sargent—J. B.—E. M.—J. W.—E. C.—Webb & Sons.—H. T. M.—Ernest Horton.—Gravetye, next week—J. H. Nimes, shortly—W. T.—D. T. F.—W. E. G.—W. M.—J. R. J.—A. O'N.—E. C.—E. M. C. T. D.—W. Heinemann—S. W. F.—J. Wallis—J. O.—H. T. M.—E. H.—C. S., Towyn—W. S.—A. D.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—G. J.—T. S.—W. C.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TRIPLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



FALKLAND PARK, SOUTH NORWOOD, SURREY, THE RESIDENCE OF C. H. WALKER, ESQ.



THE

Gardeners' Chronicle

No. 708.—SATURDAY, JULY 21, 1900.

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THE NATIONAL ROSE SOCIETY'S SHOW AT SALISBURY.

OF all the places in which the National Rose Society has for the last twenty-four years held its exhibitions, there is not one which affords so delightful a place as that which the Wilts Horticultural Society has been enabled, through the kindness of the Bishop of Salisbury, to secure for itself. The spacious and beautiful grounds of the Bishop's Palace, dominated by the lovely spire of the cathedral, fully entitle it to this position. Sixteen years ago the National Rose Society held its first southern exhibition there in connection with the Wilts Horticultural Society. Sixteen years makes a great change in all things, and therefore it was that the Society now was without the valuable services of Mr. Walter H. Williams, then the head of the renowned firm of Keynes, Williams & Co., whose kindness and energy contributed so much to its success; and whose early death on the threshold of life all his friends so greatly deplored. I well remember the almost boyish glee with which he received the news I was able to give him that he had won a cup which he had been most anxious to obtain; it was while he was the leading spirit

of the firm that they acquired and sent out that splendid Rose climbing Niphetos, which I remember his showing to me with great pride in a house when it made a shoot nearly 20 feet long. It was during the same period that he acquired and sent out the beautiful hybrid Sweet Briars raised by Lord Penzance, and which now adorn so many gardens. Still, I must not linger over the past, but proceed to give a few notes on the second exhibition the Society has held in Salisbury, of which a report has been already given in *Gard. Chron.*, July 7, p. 19. I am afraid that it must be confessed that in every respect save one, that one being the garden Roses, that it was the poorest show the Society has ever held, and, in fact, most of us looked forward to it with a good deal of foreboding, for although the winter was comparatively speaking mild, and the early spring not unfavourable, yet the cold weather in the latter part of May was such as to destroy the hopes of many an exhibitor. It was not that we had an amount of severe frost, but the cold, miserable, cheerless time was most unfavourable to the proper development of the Rose, and I always observe that when Roses get a check, even when unaccompanied by frost, their quality is greatly deteriorated, and consequently both the number of the blooms and their quality were decidedly at this exhibition below what we could have wished. The blooms were small, and the Teas showed the effect of the weather. I do not mean, of course, to say that there were not good blooms shown, but they were comparatively few in number, and when we consider that neither the well-known and successful firms of B. R. Cant nor Harkness & Sons put in an appearance, and that amongst amateurs we missed the Roses of the champion, Mr. E. B. Lindsell, this can be well understood. The Rev. J. H. Pemberton gallantly did what best could be done to make up the deficiency, and is to be congratulated on the success which attended his efforts. One of the most remarkable features in the show was the prominent position occupied by Messrs. Alexander Dickson & Sons of Newtownards and Ledbury. People make an amusing mistake when they imagine that all the Roses exhibited by this firm come from the North of Ireland. Some years ago, the Newtownards firm, finding that they could not hold their own in the earlier shows of the National, and could never hope to win what they were most anxious to do—the Challenge Trophy—determined to overcome their difficulties by having a nursery in England. There was a piece of ground which has already been made classic among Rose-growers by Mr. W. J. Grant, this was situated at Ledbury, in Herefordshire; and it was amusing to find one of the speakers at the judges' luncheon at Salisbury saying that they must have a better climate in Ireland than we have in this country for Messrs. Dickson & Sons to be able to stage such fine Roses. On which Mr. Alexander Dickson remarked that the gentleman was mistaken, for not one of the Roses he exhibited had been grown in Ireland, but in Herefordshire.

Another remarkable thing about the show was, the poor character of the local exhibits. This was deplored by many of the local people, and it does seem passing strange as they have in Salisbury the well-known firm to which I have already alluded, Keynes, Williams & Co.; while one would have thought the excellence of the exhibition in 1884 would have encouraged many to commence, and others to increase their

Rose-growing. Amongst the good Roses shown, one must place pre-eminently, Alice Lindsell, exhibited by Messrs. Dickson & Sons, which received the Gold Medal of the National Rose Society; it may be described as a noble flower with very full centre, pale blush, with a subdued yellow dash, a Rose to which will apparently stand several days, and will therefore be a boon to exhibitors. Mrs. Edward Mawley, something between La France and Ernest Metz; and Ulster, which may be described as a cross between Her Majesty and Mrs. Laing. Mr. G. Prince, of Oxford, exhibited a beautiful garden Rose, Belle-fleur, with two rows of petals, so not quite single; it is a most striking mixture of colour, carmine and orange-scarlet blended, reminding one somewhat of a Portulacca. The most remarkable feature of the show was, however, constituted by the garden Roses, especially the two stands exhibited by Messrs. Paul & Son, Cheshunt; and Cooling & Sons, Bath; there were many old favourites, and some new varieties amongst them, but as a full account of these has already been given, it is needless to particularise.

All the arrangements for the show were admirably carried out; and the paper by Miss Jekyll on "The use of Roses for Decorative purposes" was very well received—this will be published during the autumn by the National Rose Society. *Wild Rose.*

ORCHID NOTES AND GLEANINGS.

CATTELEYA x INTRICATA MACULATA.

FLOWERS of this rare and pretty natural hybrid between *C. amethystoglossa* and *C. intermedia*, are received from Joseph Broome, Esq., Sunny Hill, Llandudno (gr., Mr. A. C. Axtell), who is fortunate enough to flower it among other imported Brazilian Orchids. It is a larger flower than *C. intermedia*, and seems to well bear out the supposition of its parentage. The sepals and petals are of a delicate rose, or blush-pink, with a slight yellowish cast on the sepals, and a number of purple markings within the margins. The front of the lip is bright amethyst-purple, the basal part white, tinged with rose. A fine example of *Odontoglossum citrosomum* roseum; and sixteen flowers of a very fine type of *Odontoglossum luteo-purpureum*, all dissimilar, are also sent.

ONCIDIUMS FOR THE COOL-HOUSE.

Like many other Orchids in cultivation, the *Oncidium*s from the Organ mountains and other Brazilian highlands are fast being redeemed from the reproach that they are difficult to grow, and experience proves that the chief error formerly made in their culture was that they were subjected to too much heat, or kept continuously in a too high temperature. Messrs. Stanley Ashton & Co., of Southgate, have made a special feature of these *Oncidium*s, including *O. crispum*, *O. prætectum*, *O. curtum*, *O. Gardneri*, *O. concolor*, *O. varicosum*, &c., and they find them very easy to grow and flower if kept cool, and especially cool and dry when their growths are fully made up, and the pseudo-bulbs attained the full size. Succeeding each other for months past, there has been a fine display of these *Oncidium*s in the Southgate Orchid nursery, the latest display being of the handsome yellow and brown *O. curtum* and *O. Gardneri*, which used, until recently, to be a rare plant, and was seldom seen with the massive branched spikes such as now produced. *Oncidium tigrinum* and other *Oncidium*s of Central America are also grown in cool-houses at Southgate, and they thrive and flower in the most satisfactory manner. The Brazilian species are found to do best when suspended near the glass of the roof, or placed on staging which admits of their being in a similar position.

BROUGHTONIA SANGUINEA.

This species is remarkably pretty and distinct, possessing terminal heads of neat carmine-crimson coloured flowers, a colour uncommon among Orchids. It shares with *Diacrium bicornutum*, another pretty West Indian Orchid, the reputation of being very difficult to grow, and yet both plants may occasionally be met with in gardens where they have grown and flowered well, and kept in perfect health for years. *Broughtonia sanguinea* was recently shown by J. T. Bennett-Poë, Esq., Holmwood, Cheshunt (gr., Mr. Downes), and with him it does not appear to give trouble. A few years ago a resident in the part of Jamaica where the plant grows, wrote in reply to the question as to why it did not grow well in European gardens, and he stated that with it and with some other West Indian Orchids he believed the chief cause of failure in gardens is that they are usually potted or basketed with a quantity of peat and moss around them. This course, sooner or later proves their ruin, and the last proof that I have of it is that if we treated them in a similar manner here in Jamaica, they would die in the same way. Here they are often cut in masses as they are found growing, and suspended in the verandahs, and nothing more done to them than giving them water. Thus they flower and grow well year after year. *Broughtonia sanguinea* grows best in the intermediate-house, and it is quickly injured by cold.

THE REV. JOHN LAURENCE, A.M.

(Concluded from vol. xvii., p. 414.)

In the second chapter of the next and last book, that on the "Flower-garden," it is placed in the foremost rank among a variety of materials for the production of high-class flowers. "No composition of art can exceed it," sums up his opinion. Though as already indicated, Mr. Laurence's sympathies were largely monopolised by fruits, yet the position he occupied, and the facilities he possessed of inspecting the best gardens, invest what he has to say on the subject of flower gardening with some degree of authority. The flower garden, he recommended to be close to the house, either on the east or the west side. On the open sides, hedges, Yew being the most proper, are advised as necessary to protect from wind. Simple forms of beds are commended, and the smaller growing plants which are called "Reptiles" alone employed; the taller plants such as Sunflowers, Hollyhocks, white and orange Lilies, being relegated to the wilderness, or set close to walls or in corners of the garden. The wilderness was at this period an essential adjunct to the garden, and was laid out in avenues and walks bordered by tall clipped hedges with little pathways meandering through the interspaces planted with trees, shrubs, and those flowers, which, on account of a too aspiring habit, were debarred the parterre. Thomson's description of such a garden, written in 1728, with its vistas, its alleys green; the verdant maze, the bowery walk of covert close, and the mingled wilderness of flowers is no doubt as faithfully as it is delightfully described. But there existed no idea of the dazzle of colour-massing, of the grandeur of colour-effects, nor the picturesque grouping, in which form and outline enhance the value of mere colour.

A catalogue of flowers "usually known in England" comprises but 102 sorts. It says not a little for the judgment of Mr. Laurence that with the exception of the Mandrake and one or two more, the selection he named contains plants, all of which are still in general cultivation. Of the treatment proper to these,

with other matters of an interesting nature relating to floriculture, several subsequent chapters are filled. Linnaeus had not yet appeared, and the presentation of diverse plants under one general designation, such, for instance, as the Starwort (Aster), with Arabian Starflower, and with Star of "Bethlem," is a curious feature in this book. In the same way, members of other families than that of Narcissus are included under that term; of these, not the least interesting is the Narcissus of Japan (*Nerine sarniensis*), also called the "Guernsie Lillie," about which a little story is related of how it at first became connected with Guernsey through ballast from a ship having been discharged, among which bulbs of this plant had been embedded. In due time the latter became a product of the island, and has continued to be so ever since.

Carnations, "Picketees, Painted Ladies, Beazarts, Flakes and Flames," are treated in a fairly complete manner. At this period, and during the preceding forty years, large-flowering varieties, originally introduced from Holland, and then still an article of import, were the sorts in esteem; one flower only being allowed to develop on each plant, which was cultivated in a pot. A bloom at this time, unless at least five inches across and proportionably full, was plebeian. A calyx that burst naturally was, moreover, of the correct quality; and one of the qualifications of the Georgian florist consisted in his capacity to discern the right moment when Nature required aid in splitting the calyx. Two bits of "vellum or oil-cloth" slipped between the outmost petals and the calyx preserved the bloom in correct form. Painted Ladies were small, and also Picotees, the petals of which were white, spotted with red or purple. Other flowers largely grown were Anemonies and the Ranunculus, each in a great variety of colour. Tulips, also, were cultivated extensively, and of these our author remarks: "The Portuguese and Flemings are said to be the first that brought the finer sorts into Europe from Turkey, but at present the best to be found are in Holland."

Among "Reptiles," the Auricula is chief flower. Note is made of double and of "strip'd" sorts, which it is affirmed degenerate unless often shifted. Polyanthus was also of great variety, single and double, "some Hose-in-Hose, some Pentaloons, and some Feathers." The double white Hepatica is mentioned, and of Daisies thirty to forty kinds were said to have been in cultivation.

Among hardy annuals, Scarlet Runners find a place. They had been introduced from the kitchen-garden, and employed "to adorn walls and arbours." *Amaranthus Cockscomb*—red, scarlet, and yellow—secure much commendation for their brilliancy in the garden-beds. Balsams in variety, and French and African Marigolds were also in general cultivation.

In a long chapter on "Hindrances to Vegetation," a dislike is expressed to "chymical quackery in husbandry." R. P. Brotherton.

PALMS.

WILL you allow me to make a few remarks in answer to the article about "Italian Gardens?" As one who is extremely anxious to get together all the species of Palms which can possibly be made to grow here in the open air, and thus form a collection of Palms, I have always been eager to visit other people's collections of Palms. But I am sorry to say that at least on the French Riviera such are rarely to be found.

The only two gardens on the French Riviera

which could pretend to possess anything like collections of Palms are not the property of plant-lovers, and have, so far as I know, not been well kept up. One of them, formerly called the "Villa des Cocotiers," the property of the late Count d'Epresmenil at Golf Juan, happens to be also a garden for Palms, and in the opinion of garden-lovers, is the most beautiful garden on the French Riviera. It was laid out by M. Edouard André, the well-known landscape gardener and botanist, and it need hardly be said that many other plants are also to be found in this spot of almost ideal beauty in addition to Palms, though surely without these trees the garden would not possess a tenth of its present beauty.

In Palm-gardens, perhaps, more than in pleasure-gardens of the northern type, a natural, unartificial style of planting is necessary to produce an ideally beautiful scene that can never be effected with only northern vegetation, though certainly many northern plants, especially some of the Conifers, are most useful in gardens here, where the climate is so favourable to the cultivation of plants from widely-differing climates.

I agree with your correspondent that Palms here and there in a garden "tell" better than in a garden all Palms. Here, if anything, the Palms are not sufficiently numerous to produce that tropical effect that could so easily be obtained without interfering with the cultivation of other trees and shrubs and flowers. Let me give an example.

That most graceful of all Palms cultivated here, the *Cocos Romanzoffiana*, though it has been introduced for more than twenty-five years, and for the last ten years has fruited abundantly, is still so uncommon that all the specimens in Nice only amount to about a dozen. If anything, such a fact cannot be said to indicate that Palms are planted in an undue proportion. But visitors, seeing only the insignificant public plantations here at Nice, and the row of stunted, badly-grown Date Palms by the famous Promenade des Anglais, might certainly prefer northern vegetation. Your correspondent seems to think that Palms do not give sufficient shade; but this is an error, as many of the most beautiful species of Phoenix naturally form a very dense growth, sending out a mass of stems from one base; but gardeners who are lacking in a sense of beauty are in the habit of cutting down all but one single stem.

But there is surely no scarcity of trees giving abundant shade, even more than do the common shade trees in the north such as the Lime, of which your correspondent speaks, and that are of far greater beauty; for instance the different species of Ficus, of which at least one is well known to everybody as an indoor plant, namely *Ficus elastica*. But if a shade-tree is needed that has both foliage and flowers of the greatest beauty, and to which few others are comparable, let *Jacaranda ovalifolia* be planted. This tree is hardly ever met with, perhaps because it flowers only in summer. It has the most modest requirements as to soil and moisture, and with its foliage, which to the stranger is exactly like that of a feathery Fern, and its large spikes of equally graceful flowers of the most intense bluish-violet colour, it forms a tree desirable in any position, but perhaps most so as a background to Palms.

In conclusion: I not only agree with your correspondent that people fond of their gardens on the Riviera, should stay longer than they do, but I have ten years' personal experience of living here all the year round, and though I have lived in many different climates, I certainly have never lived anywhere, considering the conditions of the weather throughout the year, where it is more agreeable than it is here. The heat is never oppressive, as it so often is in many more southern or northern places, this depending on the dryness of the air; and the evenings and nights are always, without exception, most agreeably cool. When hereto is added that new-comer usually only in the first winter spent

here feels the need of artificial heat to lessen the chill after sunset, but afterwards never feels such a desire; then it can be understood to what an extent a person fond of an outdoor life can follow up his tastes here, especially as rainy or otherwise inclement weather is so rare. *A. R. Proschowsky.*

THE CLEMATIS.

This well known genus of the order Ranunculaceæ derives its name from the Greek word *klema*, a Vine branch, and is also known in this country by the familiar name of Virgin's Bower. The

C. Fortunei, and *C. Standishi*. This is, however, only a small list of species which, in my opinion, deserve more attention. It would take up too much time to go thoroughly into the list of species, but those which strike me more particularly are the pretty, early spring-blooming *C. calycina*, with its small, bell-shaped, yellowish-white flowers, marked inside with purplish spots; *C. alpina* and *sibirica*, the blue and white species from the Alps and the Siberian mountains respectively, so useful for the rockery, rootery, or pillar; *C. campaniflora*, with its fragrant, small white or purplish-tinted flowers which appear in June and July; the small yellow-

Anderson Henry, of Edinburgh, who, in 1855, crossed *C. patens* with *C. lanuginosa*, from which he obtained *C. Regina*, though, I believe, the honour of raising the first hybrid must be given to the late Mr. Henderson, of Pine Apple Nursery, who, sixteen years previous to the aforementioned date, raised *C. Hendersoni*, but whether it was an artificially produced or a chance hybrid I am unable to say.

The next person to take up hybridisation was my father, who, in 1858, raised the still popular *C. Jackmanni*, which he followed up with many other varieties still in cultivation up to 1877. We are



FIG. 7.—CLEMATIS DUCHESS OF YORK, AS GROWN IN MESSRS. R. VEITCH AND SONS' NURSERIES, EXETER.

(SEE P. 44.)

species, according to the *Index Kewensis*, number about 240, which are to be found mostly in the temperate zones of both hemispheres, and so, with few exceptions, are hardy in this country. Only one species, *C. vitalba*, is a native of England, which is to be seen growing freely in chalky soils, rambling over hedges, bushes, and cliffs, covered each autumn with its profuse tufts of grey plumose fruits, which gained it the name of Old Man's Beard.

Several other species are, however, familiar in our gardens—notably *C. flammula*, *C. montana*, and *C. viticella*, whilst we occasionally find the following: *C. erecta*, *C. integrifolia*, *C. paniculata*, *C. graveolens*, *C. coccinea*, *C. patens*, *C. lanuginosa*,

flowered *C. Wilfordi*, which blooms profusely in August and September; *C. lathyrifolia*, the herbaceous perennial which produces its small white flowers in loose corymbose panicles from June to August; and the sweet-scented Chinese species, *C. Davidiana*, with its tubulose or Hyacinth-shaped flowers of bright blue, disposed in elegant clustered heads during the month of September.

For size and beauty the species are mostly far surpassed by the hybrids, which have been mostly obtained from *C. patens*, *C. lanuginosa*, *C. Fortunei*, and *C. Standishi*, Hort., the last three being sent over by Fortune from China in 1851.

The first person to commence the hybridisation of the Clematis in a systematic manner was Mr.

also indebted to Mr. Charles Noble, Messrs. Cripps & Son, M. Simon Louis Frères, M. Victor Lemoine, and many others, for several fine forms; though from 1877 to 1894 successful hybridisation appears to have been almost at a standstill. This, I believe, was due to two causes: firstly, the want of using fresh blood; secondly, to the insidious "dying-off" with which the Clematis has been affected for so long, rendering hybridisation not only disappointing, but almost useless.

I am pleased, however, to be able to now inform you, after several years' close study and experiments, that I have been able to a great extent to avert this calamity, the losses at Woking being now comparatively small, and these it would be obviously

unfair to attribute entirely to the so-called "dying-off." I have noted from time to time the different opinions that have been given as to the cause of this "dying-off," some persons believing it to be caused by injury from frost, some attributing it to too much nourishment, water, and heat; some considering it to be brought about by the bursting of the cells through excessive moisture, whilst others think it is caused by eelworms or fungus, and also to grafting. There is no doubt that frost is the cause of some deaths, and too much water and bad drainage of others, but I cannot agree with them that any one of these is the sole cause of all the losses. My experience is that the plants mostly succumb during the summer months when the ground is driest and the sun has most power, and in the majority of these cases I could not detect any sign of the plants having had too much nourishment or water, or that the drainage was bad.

With regard to insects and fungus, I have often noticed them in the decayed part some days after the branch failed, but not in the first stage. I have also seen eelworms in knobs formed on the roots, more especially of the common *C. viticella*, but I have never seen this species go off in the same way as the hybrids, so I cannot attribute the cause to the eelworms, though they are no doubt very injurious to the plant.

I have frequently examined the roots of the hybrids which have died down, and in most cases they appeared perfectly clean and healthy, the decay having started at or above the graft, and the plant has often shot up again from the base, sometimes only to die down once more. Grafting also cannot be put down as the direct reason, as plants on their own roots go off in the same manner.

I do not think, however, that *C. vitalba*, which is so generally used as a stock, is entirely suitable for some of the large flowering hybrids. The roots differ from those of the latter, being of a hard, wiry character; the hybrids appearing, after they have had sufficient time to get established on their own roots, to ignore the stock, which eventually decays.

Reverting again to the "dying off," I am of the opinion that it is mainly due to loss of constitution through over-propagation, which has been brought about by the great popularity of, and the consequent demand for the hybrids, and being of a soft succulent nature, the plants have responded only too freely to the treatment. My other reasons for coming to that conclusion are, as already mentioned, that the plants mostly go off on the hot bright days of summer, and in many cases after having made several feet of growth, and are forming the flower-buds, which seems to me to imply that they are wanting in vital power, and are unable to withstand the extra call upon their strength and the extreme heat. If it is not loss of constitution, why was the "dying off" not noticed twenty-five years ago, and why has it increased of recent years, not only in this country but on the Continent? and how is it that we do not see the rampant robust growths of former years? Again, it seems strange that whilst the large-flowered hybrids have been so badly affected, I have never seen *C. montana*, *C. flammula*, *C. viticella*, or *C. vitalba* collapse in the same manner, unless my contention is correct that over-propagation is the cause. I might also mention I have not yet seen signs of the dying off amongst the new hybrids from *C. coccinea*.

As a decorative plant the Clematis is almost unequalled. Few climbers can surpass it for covering a wall or the porch of a house, or for training over trelliswork, commencing with *C. montana* early in May, and followed throughout the summer and autumn by the large hybrids of the patens, florida, lanuginosa, viticella, and Jackmanni types. To these must be now included the new coccinea hybrids *C. Countess of Onslow*, *C. Duchess of Albany*, *C. Grace Darling*, *C. Sir Trevor Lawrence*, and *C. Duchess of York*, of which we supply an illustration (see fig. 7, on p. 43). The

flowers are of a delicate blush pink, which, with those of the last type, remain in bloom till frost comes.

The Clematis is also at home planted out or grown in pots, in the conservatory, cool greenhouse, or glass corridor, if the situation is not too shady or confined. Those of the patens or florida types are often more appreciated in these positions than when grown out-of-doors, coming into bloom, as they do, at a time when flowers are somewhat scarce, through escaping the May frosts which sometimes spoil those growing outside. Rambling up pillars and poles, over a rotery or a rockwork, they are alike graceful, and when bedded out produce a most gorgeous effect; but when this is done, it is desirable that those of the viticella and Jackmanni types should be selected on account of their profuse blooming properties. Some of the smaller flowered species, such as *C. flammula*, *C. graveolens*, *C. montana*, *C. vitalba*, or *C. viticella* are also quite in keeping with wild scenery when scrambling over ruins, arbours, tree stumps, banks, hedges, and bushes, whilst several of the herbaceous and sub-shrubby species and varieties are worthy of a place in any herbaceous border. *Read before the Horticultural Club, Tuesday, June 19, by Mr. A. G. Jackman.*

MARKET STRAWBERRIES.

In your valuable article in last week's *Gardeners' Chronicle* on the cultivation of the Strawberry for market, it is said that "The fact of having a railway within easy distance, must not be thought sufficient reason for ensuring that quick dispatch of fruit that is necessary when picking is in full swing." To show how true this is, I should like to give you my experience. My nursery is about three-quarters of a mile from Angmering Station on the London, Brighton & South Coast Railway. This year I have grown a very fine crop of Strawberries, which I wished to send to Covent Garden Market in the Southampton cross-handle baskets, which held about 5 lb. each. The London, Brighton & South Coast Railway run a fruit-train three times a week, starting from our station at about noon. This answers very well for Cucumbers, Tomatoes, and other "hard stuff," but is useless for soft fruit, which to command best prices must be in Covent Garden by 3 A.M., in small packages, the weight of the fruit when in large quantities spoiling the bottom fruit; and, of course, it should be sent to market every day. Three times a week to arrive when the market is over, in large baskets, spells ruin. But these are the conditions under which the London, Brighton & South Coast Railway consented to receive my Strawberries. After a great deal of correspondence, they agreed that it might be despatched in peck-baskets by passenger-train. By the time this concession was granted, the early fruit, which naturally commands the higher prices, was over. By way of adding insult to injury, some gallon-baskets I had purchased were detained so long by the railway company that I had to procure a second consignment, both of which are thrown on my hands, as the London, Brighton & South Coast Railway decline to take them unless they are packed so that the Strawberries do not come level with the top, which means short measure at Covent Garden Market; and our fruit would soon get a bad name.

To go to another subject. I have no doubt that many of your readers are interested in Lady Warwick's scheme for training lady gardeners. I am a woman of middle age, and manage a market nursery, so I feel I can speak with authority; and there is one point that Mr. Asquith pointed out in his speech on the employment of women in horticulture, that every girl will do well to consider before taking it up as a means of getting a living, viz., "amateurishness." To be successful a woman must be prepared to be up early and late, out in all weathers, able to withstand extremes of heat and

cold, and above all, to love the work. The great drawback to the existing colleges where women are admitted is, that there is much more theoretical than practical training. "Making a thing pay" is a secondary consideration; whereas, with market growers it is the ultimatum, and no expense or trouble is spared where a corresponding good result can be shown. On the other hand, there is any amount of work in a market nursery that a woman can do better than a man. Picking, packing, bunching flowers, is essentially delicate work; making of wreaths and crosses, and also, if a woman will give her mind to it, growing Roses, Lilies, Pelargoniums, Ferns, &c.; and it must be a very small affair in which one or two men are not employed to do rough work. However, if a woman means to start in a small way on her own account, she would probably have to dig when first starting.

Then, as to poultry-rearing. I have had long and large experience, and I gravely doubt if poultry-rearing alone is ever profitable. As an adjunct on a farm or nursery, prize poultry can be made to pay well; but to breed prize birds is a fine art, and needs long experience, a keen eye to "points," and untiring attention, and is one of the most fascinating branches of rural pursuits. Bees, again, can be made profitable in conjunction with other things; but a woman must have a firm nerve and infinite patience to handle them herself. Of course, men can be had to do all these things, but no man or woman makes a good master or mistress unless he or she know how to do the thing, and servants soon find out those who know what they are talking about; and those who are ignorant give impossible orders, and do not appreciate good work. Finally, I would say to girls who are thinking of taking up horticulture, poultry, and bee-keeping—if you love country life, if you are prepared to work from dawn to dark in all weathers, if you will bring the same concentrated attention that a man must bring to be successful, and you feel sure you are more fitted for this life than that of a governess, typewriter, cashier, &c., by all means take it up—there is, to my mind, no more enjoyable pursuit; but it must not be played with. Just now there is plenty of room for women, so many of our young men having gone to the war. *Mrs. K. G. Smith, F.R.H.S.*

FLORISTS' FLOWERS.

THE WOOLLY APHIS ON AURICULAS.

As far as I can learn, this pest appears to affect only plants cultivated in pots. I grow large numbers of Auriculas in the open ground, and when dividing and replanting, I never find any woolly aphis clinging to the roots as I find it on plants in pots. It appears to flourish most in heat and drought. Cultivators in pots are rarely found complaining of any injurious effects produced by the insects, but its presence on the roots can do no good. It also clusters about the stem just on the surface of the soil.

According to the experience of Mr. W. Badcock, of Reading, the woolly aphis ceases to exist if plants affected by it are turned out of their pots, and placed in the open ground. Last year, having reduced his collection of show varieties, and desirous of saving himself the trouble of re-potting them, Mr. Badcock planted them out in his garden under a west wall, and though the aphis was present on the roots at the time of planting, when he lifted them in September to repot, he noticed the aphis had all disappeared; and when repotting the plants in May, there was not a trace of the aphis on any one of them. On the face of it, this looks as if the act of planting out infected plants in the open is an effectual remedy.

Some growers, no doubt, would look askance at the practice of planting out valuable show Auriculas in the open ground during the summer, and regard it as a very hazardous experiment. At the same

time the culture of Auriculas altogether in pots does not keep them from decay; they will die, as Auricula-growers know to their cost, and there are no published records of losses. The act of planting out is no doubt desirable at times, in the case of plants suffering from lack of constitutional vigour. As a matter of course, the position and the soil must be suitable, and there must be reasonable precautions against heavy storms. It is something to get rid of the aphids from plants by planting out, and if there be also a gain of constitutional vigour, planting out for a time is thereby justified. R. D.

DAHLIAS.

These plants are making good growth. Slugs are very partial to the succulent stems, and if let alone the pests soon spoil the best of them; so the gardener must apply soot or quicklime in the evening, and stir the soil for the space of a foot round the plants. Place a stout stake to each plant, and stick in others to support the side-shoots as these make growth, using broad strips of matting as ties. In dry weather apply water copiously.

CARNATIONS AND PICOTEES.

These plants, if growing in pots, should have their flower-stems made secure to neat sticks as the stems grow in height. Afford water regularly, never allowing the soil to remain dry for any length of time. Occasional applications of weak liquid-manure is of benefit to the plants. In dry weather let the plants be syringed late in the afternoon. Aphides are sure to infest the buds, and should be destroyed with tobacco powder, applied when the leaves are dry. The flower-buds should be thinned betimes, removing all but one on each spikelet; the one in the centre generally affords the finest flower, but a succession may be obtained by retaining some of the side-buds, and nipping out the centre or crown-buds.

Plants in beds now require liquid-manure to be applied in the evening, following the first application with a thin mulching of half-decayed horse-manure. If liquid-manure is not available, sprinkle bone-meal over the surface, and wash it into the soil with water, or apply it during showery weather.

HOLLYHOCKS

should have a mulching of half-rotten manure, after having first cleared off the weeds. Keep a sharp look out for red-spider on the leaves, and vigorously syringe them if this pest be present.

CHRYSANTHEMUMS.

The training of the shoots of plants intended to produce exhibition blooms, is an important detail at the present moment. When the plants are grown on the natural method, they are allowed to grow away uninterruptedly until they make their first break. This break is caused by the formation of a flower-bud at the apex of the stem, which causes a temporary check to growth, and forces other branches to start from the axils of the leaves below the point where the flower-bud formed. Although many of the newer varieties in the Japanese section require special treatment in order to induce flower-buds to form at the right time, many varieties succeed by the adoption of the natural break method.

Take, for example, the varieties of the Madame Carnot family, three in number, which do best on the natural method. Phœbus, still one of the best of yellows, and Mrs. J. Lewis, a charming white, are other examples, as is also the newer Mrs. Alfred Tate.

When the plants make this break, the main thing is to know how to manipulate the extra shoots that present themselves. On some varieties as many as ten additional growths will spring from one stem, which would in time grow and produce flowers; but where large specimen blooms are looked for, thinning of the shoots is a necessity.

As a rule, the shoots are limited to three, which form after the first natural break. Present day gardeners confine the number even to two; but in

my opinion plants when properly grown from the cutting stage are able to produce three flowers. Select the three most promising shoots, which are generally those situated nearest the apex, and pinch out all other growths, thus concentrating the energies of the plant in three shoots and no more. Let these be tied loosely to the stakes, and continue to pinch out all superfluous growth.

About the end of June the leaf mining-maggot, *Tephritis onoropordinis*, gets troublesome, and if left alone quickly destroys the tissues, giving a check to growth. Persistent hand-picking is the best remedy, either squeezing the maggot with the finger and thumb, or pick them out with a knife-point. If neglected, the foliage is quickly ruined, and the plant spoiled.

The present affords a suitable season for ensuring suitable cuttings in December. Plants growing at the present time to produce specimen blooms often throw up suckers from the base, or strong lateral shoots; and instead of throwing these away, insert them singly in small pots in sandy soil, and plunge them in a gentle bottom heat, keeping them close and shaded until rooted, then remove to a cold frame.

As soon as the pots are filled with roots, shift the plants into 6-inch pots, using rich potting-soil, and pressing it firmly about the plants. Stand the plants out-of-doors in an open spot, and allow one stem only to grow. This will attain a height of from 2 feet to 4 feet according to variety, but some dwarf-growing varieties will not go beyond 1 foot. Such plants produce one bloom, and they are useful subjects for putting in the conservatory or dwelling. If cut down rather early after flowering, they will be certain to produce suckers. This is better than the constant removal of suckers during the summer from plants intended to throw large blooms, which weakens those plants.

Aphides, both green and black, infest the points of the shoots, and an insecticide should be used weekly for their destruction. Mildew has already made its appearance owing to the continued moist weather, and flowers-of-sulphur should be sprinkled over the affected parts. *E. Molyneux.*

NOTES FROM THE SOUTH-WEST.

(Continued from page 22.)

THE Poppies, Oriental, Iceland, and Welsh, have provided brilliant colour-effects, but their fragile petals have been sadly battered by the inclement weather. I lately saw in an interesting garden a handsome form of the common Horn Poppy, with bright, orange-red flowers, each of the petals having a yellow blotch at the base. *Primula sikkimensis* has been graceful in a moist and shaded site in the rock-garden, and the double white Rockets have been unusually fine, the plants being very vigorous, and producing extra long bloom-spikes. No herbaceous border should lack this handsome, sweetly-perfumed plant, which only needs annual division and replanting in fresh soil to keep it in the best of health; while another subject of merit is *Sidalcea Listeri*, which bears spikes of flesh-pink flowers from 2 to 3 feet in height. During the month of May, *Sparaxis* and *Ixia* made an especially bright show in a sunny site almost overhanging the sea—a position they have occupied for three years without disturbance, in company with *Vallotas* and *Belladonna Lilies*. By the side of a streamlet *Trollius Orange Globe* has produced its deep yellow-coloured flowers, far eclipsing in their size and colour those of the type, but falling short of the glowing orange tints of *T. Fortunei* and *T. Gibsoni*.

Roses are fine, though late. A splendid plant of *Rosa lævigata*, which covers a great portion of the front of a house at the entrance of the river Dart, has been covered through the months of May and June with snowy, single blossoms, 5 inches in diameter. No Rose could have made a finer display than the one in question, as, in addition to the profusion with which the flowers were pro-

duced, the individual blooms were marvels of chaste beauty, the pure white of the petals being set off by the golden stamens. Another single Rose, whose blossoms are as diminutive as those of the last-named are large, is *Rosa polyantha simplex*. Trained up a 12-feet-high tree-stump, and allowed unrestricted growth, it develops a maze of long, drooping, flower-laden shoots, that form a veritable floral cascade. Early in May, that rather capricious Rose, *Fortune's Yellow*, was in bloom, a plant on a sheltered southern wall, bearing more than seven dozen delicately-tinted blossoms. In climbing-plants, *Solanum jasminoides* commenced its blooming period early in May, and will continue to produce flower-clusters in increasing quantity until September, while it rarely becomes flowerless until Christmas, unless unusually severe weather sets in. *Hydrangea scandens* is now attractive when trained on the boles of trees; and the new *Polygonum baldschuanicum* has proved that its value was not over-estimated. The Ivy-leaved *Pelargoniums*, that drape many a cottage and house wall in the south-west, have fortunately survived the winter, and are already commencing to spread and flower. The Flame *Nasturtium* (*Tropæolum speciosum*) has flung its scarlet trails over the sombre evergreens, but is by no means easy to establish or common in the neighbourhood. *T. pentaphyllum*, though of easier culture than the last named, succeeding in porous soil in a sunny position, is rarely met with. Its Indian-red blossoms, with their long tubes, are produced in countless numbers, and the plant when in full bloom has a very decorative effect.

FLOWERING SHRUBS IN THE SOUTH-WEST.

Abelia floribunda is a handsome flowering shrub, rarely seen in gardens, although its long rose-coloured blossoms are very ornamental. I have known cases where the commoner and far less decorative *A. rupestris* has been sold under this name. *Abutilon vitifolium* forms an attractive feature in the south-west in mid-June, pyramidal specimens 10 feet to 20 feet in height, freely studded with large white or lavender flowers, when standing in isolated positions, and thrown into high relief by an evergreen back-ground, forming most artistic features. Unfortunately, the heavy rains and winds have this year shorn these lovely flowering shrubs of much of their beauty. *Benthamia fragifera* is to be found in most South Devon and Cornish gardens, many examples being over 40 feet in height. When in full bloom, and backed by tall trees, its wealth of pale sulphur-coloured flowers renders it a conspicuous and handsome object, while in late autumn, as its fruits (sometimes an inch in diameter) assume the crimson hue that has earned for this subject the title of Strawberry Tree, it enters upon a second period of attractiveness. *Carpenteria californica* is now in full flower, large bushes 7 feet in height, and as much in diameter being striking objects. Its white, golden-centred blossoms, not unlike the flowers of certain *Cistuses*, but with far greater substance of petal, are deliciously fragrant. The *Cistuses* are particularly decorative during their midsummer flowering period, *C. laurifolius*, varieties of *C. ladaniferus* and *C. florentinus* being exceptionally handsome shrubs; but the gem of the family is *C. formosus*, which bears deep yellow flowers with a spot of maroon at the base of each petal. *Citrus trifoliata* is grown in several gardens, and in one that I know flowers and fruits freely. The Brooms are especially valuable for effect in the spring and early summer. *Cytisus præcox* being the first to flower, followed by *C. albus* and *C. Audreanus*, which sometimes comes absolutely true from seed, and later on by the well-known yellow Broom, at its best towards the end of June; while *C. racemosus* may be found bearing its scented flower-sprays during almost any month during the summer and autumn in sheltered gardens. *Dracenas* of the australis type and allied forms are now blooming freely, their immense flower-panicles, often 3 feet or 4 feet in length, haunted by innu-

merable bees attracted by the far-wafted perfume. *Drymis Winteri* is a handsome shrub with loose clusters of fragrant pale yellow flowers, specimens 15 feet in height, being very ornamental when in full bloom. *Embothrium coccineum* is the flowering tree *par excellence* of the south-west, and it would be difficult to imagine anything to excel the brilliancy of a large specimen, 25 feet or more in height, ablaze with its scarlet flower-trusses. This plant is comparatively common in Devon and Cornwall, and there are many splendid examples to be met with in these counties. *Eugenia*s and *Leptospermum*s are also in flower, as is *Hakea microphylla*. The showy *Hydrangea paniculata* has been studded throughout the length of its arching shoots with its large white flower-heads. *Philadelphus hirsutus*, *P. Lemoinei*, *P. microphyllus*, the charming but rather tender *P. mexicanus*, and *P. speciosus*, with snowy flowers 2½ inches in diameter, form a representative selection. *Rhapiolepis ovata* is a charming flowering shrub, a large specimen, 7 feet in height by 8 feet in diameter, thrown into high relief by a setting of evergreens, forming a striking picture. *Rhodotypos kerrioides* is also an attractive subject, its white blossoms being very similar in appearance to those of the Jew's Mallow (*Kerria japonica*), which, with its double form, is now in flower. *Solanum crispum* is bearing its yellow-centred blooms; and *Veronica Hulkeana* has just gone out of flower, as has the handsome *Xanthoceras sorbifolia*—a large bush of this, over 8 feet in height, bearing a profusion of long, white flower clusters amid its deeply-cut foliage, was a striking sight in May. *S. W. F.*

AMERICAN NOTES.

UNITED STATES.

HYBRID PEARS IN AMERICA.—The Pear has had a strange and interesting history in America—a history which we have not time now to recall. Suffice it to say, that though the greatest activity prevailed among our early horticulturists, like Manning, Wilder, Hovey, and many other notable ones, in the testing of varieties of Pears from Europe and those of American origin, yet this fruit has subsequently fallen into comparative disregard, the large majority of the old varieties have been forgotten, and the list of Pears known to the average American fruit-grower is reduced to a half-dozen, such as Bartlett, Flemish Beauty, Duchesse d'Angoulême, and Seckell. This has been largely because the American idea is to grow fruit in large orchards, by wholesale methods, and to market it in large packages. Pears do not take kindly to such treatment. They demand more personal attention to the individual trees, more coddling, more care in marketing.

The same condition explains the interest which has been taken in the new hybrid Pears recently introduced. The type and forerunner of them all has been the Kieffer, which is now very generally believed to be a hybrid of the common Pear (*Pyrus communis*), with the Japanese Sand Pear (*Pyrus sinensis*). The Kieffer first came into notice about ten years ago, and began to attract special attention some eight years since. Its characters are a strong, upright growing, very thrifty and healthy tree, coming early into bearing, often bearing the third year, with good crops the fourth; with abundant, medium large, shapely, moderately well coloured fruit, which is hard, and therefore ships admirably, and keeps for a long time. The fruit is, however, of such inferior quality as to make it practically unavailable for table use at home, and fit only for the indiscriminating market. Of course the market is largely indiscriminating, and this has made it possible year after year to dispose of great quantities of Kieffer Pears at remunerative prices, while other much better Pears would not bring enough to pay for handling.

The Kieffer Pear, moreover, has proved well adapted to the needs of the large canning factories, where fruits are tinned in great quantities for the

market. The firmness of flesh and uniformity of texture, along with other good points, has made this variety supplant almost all others for this purpose. It is a well known fact that thousands of dozens of cans are filled with Kieffers every year and labelled "Bartlett." This is because Bartlett has the reputation in this country of being the best canning Pear. Kieffer is really a very good fruit when canned, especially if the canning is properly done.

Besides the Kieffer, there are a few other very similar varieties for which the same origin is supposed. The most prominent of these are Le Conte and Garber, both of which are extensively planted. All these varieties do better in the southern States, though Kieffer succeeds fairly well as far north as New York and southern Ontario.

The plantings of Kieffer, Garber, and Le Conte—especially of the first—have been excessive in the last three years. Areas beyond belief have been set with trees at almost any price. In fact, the nurserymen have been charging two to three times as much for trees of Kieffer as for Bartlett, though the former is much easier to propagate. There is no doubt in the minds of most pomologists that this planting of the hybrid Pears has been greatly overdone, and that soon there must come a serious reaction.

Some of these hybrid varieties have been found to grow well from cuttings under favourable conditions, and are therefore used extensively as stocks for budding or grafting other varieties of Pears. *F. A. Wagh.*

IRELAND.

SPRAYING POTATO PLANTS.

MR. RICHARD J. MO S, F.I.C., F.C.S., of the Royal Dublin Society, has just published a pamphlet on *The Adhesive and other Physical Properties of Certain Copper Preparations Used for Spraying Plants*, starting with the fact that "The precise nature of the effect produced by spraying preparations on the fungus of Potato diseases is, I believe, unknown; but that the action of copper as a deterrent to the advance of fungoid growths is an accepted fact, by increasing the resisting power of the plants, as well as to enable a stock of sound tubers to be got, it would follow that the best spraying-mixture to be adopted should possess the following advantages: it should cover the leaves with a uniform deposit, and should be adhesive, so that the effect of rain will not be sufficient to wash it off.

In dealing with the factor of subsidence, he points out that the best course to adopt is to use for spraying purposes only those mixtures which have the solid matter always uniformly distributed; as in other preparations, the danger of applying too much copper to part of the crop, and scarcely any to the remainder, has been very commonly observed, although this fault has been slightly amended by using a mechanical agitator in the spraying utensils.

When alluding to the experiment of M. Aimé Girard to test the action of the rain, he got twelve pots, and planted Potatoes, &c., and submitted them to the action of rain (mechanical) in varying stages, torrential, heavy, and light showers; after this process, he chemically treated the foliage to determine the quantity of copper in the ash. The results showed that torrential rain removed the greatest quantity, and the heavy and light rains a much lower percentage. However, one of the solutions experimented with, namely, an ordinary Bordeaux Mixture, with a 2 per cent. of treacle added, had by far the best resisting power, only 11·2 was removed, neither the heavy nor light rain having much effect. The conclusion he arrived at was, that "The copper is removed more by the mechanical action of the rain than by its action as a solvent. It is also advised that carbonate of soda in combination, as this substance adds to the adhesive properties of the mixture more than does lime. The writer of this pamphlet likewise carried out a series of identical experiments, which con-

firmed those of his continental colleagues; but one important result achieved by him consisted of testing one of the common commercial powders for the prevention of blight, which are nearly all almost identical in composition. He found under the first shower that 46·60; under the second, 5·90, and the total quantity washed off amounted to 52·57—an analysis which betrays its ineffectiveness.

In conclusion, he is under the opinion that, speaking for Ireland, "that dry hydroxide powders must be set aside as the most unsuitable of the preparations in use in Ireland." The choice rests between mixtures prepared by adding either milk-of-lime or a solution of carbonate of soda to a solution of copper sulphate. If it could be really ascertained that the copper alone is the active constituent of the deposit produced by these mixtures, I should not hesitate to recommend the use of the soda preparation, on account of its superior adhesiveness, the great ease with which the mixture can be prepared, in a condition of perfect freedom from gritty matter, and in a state eminently adapted for use with spraying machines. It is, however, by no means certain that the lime in Bordeaux Mixture does not perform some useful function; and for this reason I am of opinion that the lime mixture is the safest to use in our present condition of uncertainty on this point. He prefers to use good unslaked lime; if this is not procurable it would be advantageous to use in its place sodium carbonate, and to always bear in mind to see that the copper preparation dries effectually on the foliage, and it is uniformly distributed. *A. O'Neill.*

PLANT NOTES.

DORONICUMS.

FOR making a bright display and as cut flowers, these hardy herbaceous perennials take a high place. The several species met with in gardens bear yellow flowers, and the only distinctive characters are in the habit of growth and size of the flowers. *D. plantagineum* is perhaps the most stately species, *D. p. excelsum* is also excellent, and differs but little from the type, except in growing more robustly. The flower-stems of this species attain to a height of 4½ feet in good soil. *D. austriacum* is a dwarfier species, rarely exceeding 2 feet in height; and *D. caucasicum* belongs to this group. *Doronicums* may be lifted from the border, potted, and forced. The potting may take place late in October or in November, and the plants placed in cold frames until put into the forcing-house in January. They must be very gradually forced into growth, or the flowers will lack substance and will not last long after being removed from the plants and placed in water. Good flowers are produced in March, at which season they form a welcome addition to other forced flowers.

Doronicums will thrive in almost any kind of soil; and flowering is long continued if water be afforded plentifully in dry weather. If division of the clumps is practised annually, the stems are fewer, and the individual blooms larger than when the plants are left in the soil undisturbed for three or four years. *H. T. Martin.*

CULTURAL MEMORANDA.

BROWALIA SPECIOSA MAJOR.

This plant is known to a good many gardeners. It thrives in an intermediate-house during the winter months, and cuttings struck in heat in April, when they strike freely, grow best during the summer months in the greenhouse or a cold-frame. The plant is liable to infestation by thrips when grown on dry stages, and at this season it should be frequently syringed, and the shoots topped. There are but few flowers which give us such bright blue colour in the winter season, and for this reason the plant is a useful one. *A. J. L., Wyfold Court Gardens.*

LÆLIO-CATTLEYA × WIGANIE
VAR. AUREA.

Two of the most distinct hybrid Orchids of the year are *Lælio-Cattleya* × *Wiganie*, and its variety *aurea*, shown by Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr., Mr. H. W. Young), in the splendid group staged at the show of the Richmond Horticultural Society on June 27; and before the Orchid Committee of the Royal Horticultural Society on July 3, on which occasion the typical plant was awarded a First-class Certificate. Both forms represent varia-

THE FERNERY.

BRITISH FERNS FOR PUBLIC PARKS.

To the British Fern lover, that is, one who knows something about the wonderful variety and decorative capacity which have been discovered or evolved from the common or normal forms by the Fern-hunter and the skilful selective raiser, it is a matter of intense surprise that no use is made of them in our public parks, and the minor open spaces, which in these later days are rendered so ornamental as to constitute ideal spots for their cultivation and

his care. Many of our native Fern species are common in other countries, and hunting the mountain-woods and hollows almost to the Asian borders of Europe, we shall find the bulk of them in precisely the same types as with us; in this respect, therefore, they may be termed rather European than British. In another respect, however, that is, in respect to those marvellous "sports" and their selected results, such as we see at Kew and in some of the few amateur collections, we have a number of purely "British" Ferns, which, in their varietal scope and diversity, utterly eclipse the Ferns of all the world besides, and so far surpass in delicate

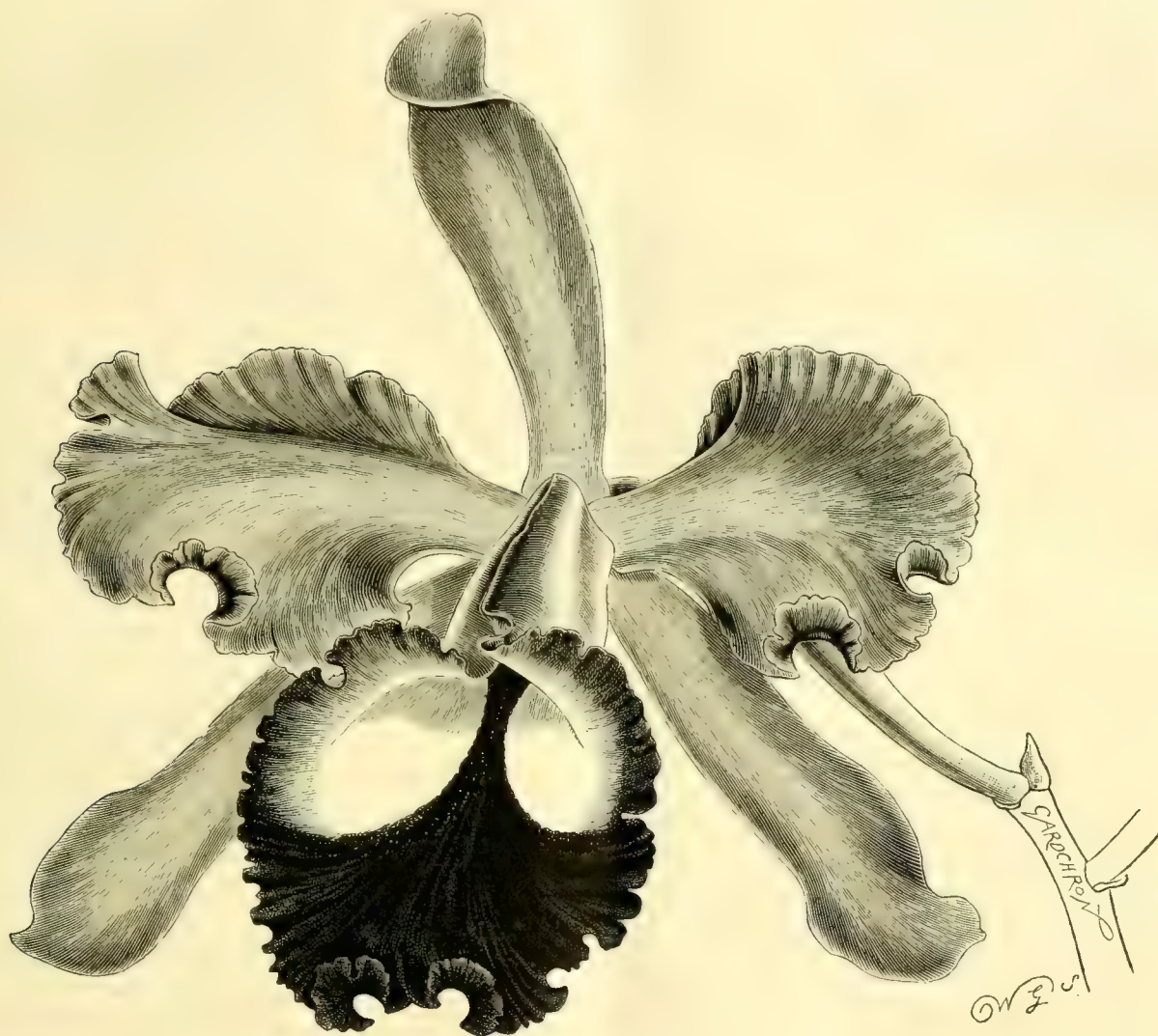


FIG. 8.—LÆLIO-CATTLEYA WIGANIE VAR. AUREA.

tions obtained by crossing *L.-C.* × *Gottoiana* and *Cattleya-Mossiae*, the peculiar yellow and copper-coloured tint which is seen in the forms of *L.-C.* × *Wiganie* doubtless being derived from *Lælia tenebrosa*, which was one of the parents of the natural hybrid *L.-C.* × *Gottoiana*.

The type plant has delicately tinted sepals and petals of a peculiar shade of light copper-tinted rose; the labellum being rich purplish-crimson in front, and with distinct purple lines running from the base to the bright yellow middle area. *L.-C.* × *Wiganie aurea* (see fig. 8) has light yellow sepals and petals slightly tinted with rose, the front lobe of the fine crimped labellum being of a lighter shade of purplish-crimson than the typical form.

exhibition. Among all the London parks, for instance, we know of only one, at West Ham, which has a collection, presented years ago by the writer and some sympathetic friends; in no other park do we know of a single varietal form, though as usual thousands of the common "weed" Ferns occupy well selected shady nooks, and also as usual even these are of but three or four species, all the rest of the forty or more being ignored. At Kew alone, thanks to bequests and gifts, are our lovely British varieties fairly represented, but though this grand collection has displayed its feathery charms season after season to the public gaze for some dozen years or so, no public official or superintendent of parks has apparently seen therein a lesson for his own adoption in the domains under

beauty or curiosity of form, the common Ferns of our islands as to immensely enhance the bewilderment of the connoisseur that the latter alone are used for garden purposes. It is, as we have said before, precisely as if a Pansy-fancier ignored the finest strains of Pansy, and devoted his best parterres to scores or hundreds of the diminutive native Heartsease, all alike and poor at the best; or as if a reputed rosarian stocked his garden with nothing but wild Briars. The comparison is exact; but such restrictions as are here implied would, from a patriotic point of view, be even more justifiable, for we are indebted to innumerable foreign sources for much of our advance in Roses and Pansies, while our wonderful Fern varieties are practically all absolutely "home-made;" we know

but of one which hails from France, and none which are "made in Germany." On the other hand, as we have implied, we might visit the botanical gardens of all the outside world, and not only should we fail to find such a collection of native varieties of Ferns as we see at Kew, but we should speedily learn that the material was lacking, the richest, ferniest tropical regions having failed to furnish it.

The wonder is increased when it is known that these beautiful forms are fully as hardy as the commonest, that is, absolutely defiant of frost, so that once established they are practically everlasting. A large number of the choice types can be cheaply procured, so that the initial expense would be but trifling; all that is required is a liberal admixture of leaf-mould in the soil, and something in the shape of a sloping rockery, facing the north or north-east, and sheltered fairly from blazing sun and rough winds. Such conditions of aspect exist in hundreds of nooks in our parks and gardens, and given the plants, all that is needed is a little knowledge of their habits and needs in the planting. The material for a hundred collections exist already at Kew; most of the Ferns there are now sturdy clumps of many crowns, which to the fernist's eye are clamouring for division, of which the space available does not permit. There is thus a chance in two directions, which it is a pity to lose sight of, for if it were profited by, the British public would have so many additional opportunities of seeing and knowing what British Ferns really are, and in addition, the Fern Vandal who strips our leafy lanes and woods of their ferny wealth, would find his market gone, the popular taste becoming educated, and lifted to higher levels.

We will conclude by expressing the hope that one or more of our prominent park officials, or of the powers that be in Spring Gardens (happy name in this connection), will see this article, digest it, and see what can be done in the direction indicated; the writer, at any rate, would be happy to advise in case of need, if called upon to do so. Chas. T. Druery, F.L.S., V.M.H.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAR, Bart., Clare Lawn, East Sheen, S.W.

Oncidium varicosum is one of the finest of the genus, though unfortunately, it soon dwindles if not treated properly during the resting period. It is now emitting roots from the young growths, and if new material be afforded now it will do good. Placed in small well-drained pans, with a small portion of peat and sphagnum-moss, and suspended in the Odontoglossum-house during the summer and early autumn months, the growths made are strong and healthy. Afford water when the moss indicates dryness. On the appearance of the flower-spikes remove the plants to a house having a slightly higher temperature, and where less moisture is present. To conserve the vitality of the plants as much as possible, the spikes should be cut immediately the apical flowers have expanded.

Summer potting is generally condemned by cultivators, but for my part I cannot understand the objection to attend to the need of particular plants when their condition warrants such a proceeding. For example, there are species of *Masdevallia* which soon after flowering proceed to make new leaves and emit roots, and such are benefited if afforded fresh material; and if larger pots are required, no harm will result from repotting the plants, providing it be carried out effectively, and the plants treated as they ought to be afterwards. Speaking generally, cool Orchids are better when undisturbed till the month of September, but, as with the above genus, so with many other species and individual plants, their condition and need should be studied more than the season of the year. Hosts of *Cattleya* and *Laelio-Cattleya* hybrids, and the parent species, arrive at a stage of their growth during this and the next month when repotting becomes very necessary, if the plants are to be kept in a healthy state, and if the work be carefully performed a rapid re-establishment follows. Seedlings

of all kinds of Orchids likewise must be kept in a progressive condition, and not allowed to remain with their roots cramped for lack of space and fresh material. In all cases of disturbance at this season, a little more shading may be afforded the plants, which may be done in a variety of ways, such as placing sheets of paper over the plants, or mats on the outside of the roof; but I think that there is little danger if the proper atmospheric and other conditions in the houses are maintained. Of course, careful application of water is needed for some little time after root disturbance, or the new materials may get soured very early.

Cleanliness at the season of growth is very essential, and the Orchid cultivator must find the time for keeping the leaves free from dirt and insects. The young leaves and growths should be very carefully handled, as they are very tender, and the least injury will become greatly magnified at a later date, and remain an eyesore for some years. A soft sponge and clean rain-water is all that are necessary, excepting where scale exists, when some soft-soap may be added to the water, and a brush employed to remove the insects.

Fireheat seems out of place at this moment, but in connection with Orchids from the warmest regions of the earth we cannot very well do without it. So far as actual temperature is concerned, fireheat is almost unnecessary, but there are very few periods, and those of short duration, when it can be entirely dispensed with as an aid to the dispersal of surplus moisture, which would otherwise be deposited on the leaves and flowers, to their detriment. Not that a little condensation on the leaves is hurtful, on the contrary, it is beneficial if it be dispersed early in the morning; and this, without the aid of fireheat, cannot always be done. The *Cattleya*, Mexican, and the cool houses should have no fireheat applied under ordinary circumstances; and the lower the night temperatures, the better is the health of the plants, thus imitating the contrast between the day and the night temperatures in their native habitats. Do not hesitate to leave the top and bottom ventilators open at night, when wind is not cold.

Coelegyne Sanderiana is a plant that generally needs new material about this date. It is a beautiful but very shy-flowering form, the treatment proper for the plant having yet to be discovered. It thrives in a basket in the *Cattleya*-house in a compost of peat one-half, turfy-loam with the soil shaken out of it one-quarter, sphagnum-moss one-quarter, with sand or very small crocks. Whilst making roots, water in quantity is needed, but when growth is finished, a long dry period of rest should be afforded.

Pleiones and the *Deciduous Calanthes* may now be afforded weak liquid farmyard manure, the former being afforded water till the leaves begin to drop. *Phaius grandifolius* and other species allied to it may also receive manure-water, if the soil is quite worn out. *Sobralias* in a pot-bound condition benefit from an occasional application.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Peaches and Nectarines.—The trees from which the fruits are gathered will require close attention, syringing them at least once a day, and if red-spider should gain a footing an approved insecticide should be applied with a syringe, wetting every leaf. Let the borders be kept moist by means of a mulch, and the application of water when the soil is approaching dryness. Borders which have been long in being will benefit from liquid-manure applied in a strong state, and rather copiously. Shoots where crowded should be thinned out, and all shoots over 2 feet in length stopped. Vigorous trees must be got into a quiet state as early as possible, stopping all laterals of the current season at the lowest leaf. Where convenient, the lights should be removed from the roof, the night dew being very refreshing to the trees.

Mid-season Trees.—The fruits will now be approaching ripeness in the case of these trees, and they will be improved in flavour by throwing the house open in fine, warm weather. Remove or push back the leaves which shade the fruits from sunshine, and apply water freely to the borders until the fruit is ripe. This slow maturing of the fruits gives great depth of colour, increases size,

and flavour. Let the trees be heavily syringed early in the afternoon, in time to allow of the fruits to become dry before nightfall.

Late Trees.—Most of the late ripening Peaches take a longer time to acquire high colour than the earlier ones, so that at the present time every fruit in the late houses should be fully exposed to the sun, and otherwise carry out all previous directions suited to the season. Trees showing a tendency to yellowness in the leaves will be improved with an occasional application of sulphate of ammonia at the rate of one ounce in one gallon of water. When using the sulphate, the application should be made early in the day, so that the fumes may evaporate before the houses are closed. Syringe the trees twice daily, except during dull weather, when once in the early part of the day will be sufficient.

Strawberries.—To secure strong full-grown plants for early forcing, the runners should be well rooted and ready to go into their fruiting-pots at this date. A good potting soil for the early batch consists of turfy-loam of medium heaviness, bone meal, charred earth, and a small quantity of decayed manure. Afford ample drainage, and pot firmly, using the rougher portions of the soil in the bottoms of the pots. Stand the plants on beds of coal ashes or on boards, allowing plenty of space between the plants. Remove all runners from the plants, and weeds from the pots, as fast as they appear, and during hot weather apply water overhead by means of a coarse rose water-can morning and evening. When established, do not let the plants become rooted into the coal ash-bed.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Ilchester, Abbotsbury Castle, Dorsetshire.

The Preparation of Carnation Beds.—In view of the planting out in beds where the plants will flower, the work of digging and manuring should soon be taken in hand, the ground being heavily dressed with well-rotted dung, and trenched two spits deep. The land should be left alone to settle for a week or two, and then be afforded a dressing of bone superphosphate, fresh soot, which should be lightly stirred in with the digging-fork, and the land brought to a fine state of tilth. If gardeners would prepare their Carnations in this manner they would seldom lose plants in the winter. In ground thus prepared the roots of Carnations go deeply, the plants consequently do not suffer from drought, and they produce fine flowers.

The Budding of Briar Stocks.—Standards used as stocks, unless of great strength, should be securely staked, and all shoots issuing from the roots and along the length of stem rubbed or closely cut off, three or four shoots only being left to receive the buds; these should be the growth of last year, and of the size of a lead pencil. The operation of budding should be begun when the bark slips from the wood readily on stock and bud. The shoots of Roses taken for furnishing buds should be strong, and with buds in a fairly plump and well-developed condition, and these must be kept in a can of water whilst the work is in progress. Having made a cross-cut half way round a shoot near its junction with the stem, slit the bark downwards for 1½ inch, and having the bud ready cut and denuded of its wood, but reserving the germ of the bud intact, slip it under the raised bark quickly, cutting off a quarter of an inch that overlaps the cross-cut, and bind firmly, yet not severely, with worsted, bast, &c. When the bud has "taken," stop all shoots from the stock, but do not remove them, and loosen the ties round the buds.

The Flower and Foliage-beds.—The weather is favourable to the growth of the plants, and in well-prepared soil they will have got well established. On land overlying gravel or sand, strong feeders, such as *Cannas*, *Racinus*, *Dahlias*, *Abutilons*, *Daturas*, *Catalpas*, *Paulownias*, and *Bamboos* may be afforded fairly strong liquid-manure occasionally. The soil should be stirred with the Dutch-hoe previous to affording water at the root. If leaves of very large size are desired, some thinning of the lateral shoots may be performed. In Dutch and other geometrical gardens, the plants require constant attention in keeping them to their allotted spaces, so as to obtain the desired colour-contrasts. The stopping of vigorous side-shoots of *Pelargoniums*, fixing to the soil the longer shoots of *Verbenas*, *Heliotrope*, *Petunias*, so as to get the

plants uniformly dwarf, and the soil rapidly covered, must receive weekly or bi-weekly attention. The tops of Golden Pyrethrums and Alternantheras, as the flower-spikes show, should be pinched or cut off; also clip carefully the growths of *Mentha Pulegium* and *Cerastium tomentosum*.

Vases and Window-boxes.—These, when much exposed to the sun, require to be afforded water morning and evening, if the plants in them have made numerous roots; and some mild, non-odoriferous manure-water applied once a week.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Thinning Apples and Pears.—This operation should be no longer delayed, the fruits being now of a size that makes selection of the probably best specimens an easy matter. There is much need in these gardens for thinning, and doubtless elsewhere, the trees being very heavily cropped. Many varieties of Apples and Pears which have the reputation of being biennial croppers, are rendered so simply by cropping them too heavily. The fruit left for a crop should be as heavy as a tree can carry without being greatly exhausted, and as one well-developed fruit is worth two or three middling sized ones, this fact should be well impressed on the person who is entrusted with the work. Large-fruited Apples or Pears should be very severely thinned if the fruits have set abundantly.

Strawberry-beds.—As soon as the crops are gathered, the plants in those beds which will be retained for another year should be divested of all their runners and the older leaves. This is best done by clasping as much of the foliage as it is desirable to retain with the left hand, then with the right cut off the runners and the leaves at one sweep of the knife. Runners which may have become rooted, should be hoed down, and together with the rubbish be raked off. The surface may then be loosened with a hoe from time to time, all runners being removed as they appear. Beds which having stood their allotted time, will be cleared off the land, should be chopped up, and allowed to lie on the ground for a few days, and then burned on the spot. These plots can be planted with late Broccoli as no further preparation of the land is wanted.

Fruit gathering.—Soft fruits should be gathered for preserving uses in a dry condition, but early enough in the day to enable the preparation to be carried out the same day that it is gathered. Red Currants for making jelly should be rather under than over ripe; and Cherries of the Kentish Red section are ready for bottling whole when the stone parts easily from the fruit—to ascertain this, hold the fruit with the finger and thumb of one hand, and pull the stalk with the other. Raspberries for bottling should be gathered while yet firm, and with the stalk attached, and Strawberries should also be in like condition. Oxonian is a fine variety to grow for this purpose.

Miscellaneous.—Late Strawberries on light soils will need plentiful supplies of water so long as the present hot weather lasts. Once they are allowed to become dry at the roots the crop is soon over, but by affording them moisture as often as the plants appear to need it, the supply may be extended well into August, providing the beds are situated on borders on the north side of the garden walls. Forced plants which were set out a few weeks ago, require copious supplies of water and a mulch, if only of short litter. The washing of the wall fruit-trees late in the afternoons of warm days is very beneficial to the trees, keeping them free of insects and dirt. A constant war must be waged against weeds, hoeing the land, but leaving the weeds to wither up where they lie.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

The Conservatory.—The weather being now uniformly warm, air should be admitted day and night, and the paths and beds damped down once or twice a day in order to correct aridity. Plants as they go out of flower should be removed, and the seed-vessels removed from Campanulas, &c.; by doing which, and by affording manure-water, the plants can be got to flower for five or six weeks longer. Most Ferns of the warm fernery may be employed in conservatory decoration during the summer months, affording fresh-looking greenery as a foil to plants in flower.

The Stove.—Air may now be freely admitted at the top and bottom if draughts can be avoided. Let the plants be thoroughly syringed at closing time, admitting a small quantity of air at the apex of the house in hot weather. At this season the creeping plants in this house may be regulated, and the growths thinned. Gloxinias are now generally raised from seed, and provided a good strain is obtained, more variety of colour and form are obtained in this way, than is possible by leaf propagation. The present time is suitable for increasing the stock of any particular variety by leaf cuttings. The full-grown leaves should be cut with a sharp knife, care being taken not to bruise the leaf-stalk, inserting them to the number of sixteen to twenty in deep pans or flower-pots, filled with a light sandy compost of equal parts cocoa-fibre dust (or peat), and leaf-mould and sand. Place the pans in a part of the stove where they can be shaded, and lightly spray them over frequently. Begonia Rex, and similar ornamental-leaved varieties, root freely under like treatment, and young highly-coloured plants raised in this manner are effective in the decoration of apartments.

Primulas for flowering late in the year may receive their final shift into 5-inch pots, a very convenient size. The pots, clean or new ones, should be carefully drained with small crocks, covered with some turfy fragments; and as a good potting compost the following may be used, good loam two-thirds, and leaf-mould or well-decayed hotbed-manure one-third, passed through a half-inch sieve, with plenty of silver-sand. Pot the plants with a moderate degree of firmness, keeping the ball about half-inch below the surface, with the lowermost leaves resting on the soil, and finish off neatly by pressing the soil with the fingers round the collar, so that there shall be no risk of twisting when the plants are moved about. The leaf-stalks being very brittle, the greatest care should be taken when potting not to break them. Primulas, to be well grown, should never lose a leaf, from the cotyledon to the flowering stage.

Freelias.—The earliest batch have been roasting in the sun, and are now ready for starting. Shake out, grade the bulbs, and place nine or ten of the largest in 5-inch pots so as to make good potfuls; the compost used in potting being identical with that recommended for Primulas, excepting that some dried cowdung is placed over the drainage. Fill the pots to within 2 inches of the top, make the soil firm but not hard, and place the bulbs at equal distances apart, and cover with a 3-inch layer of soil, working it among the bulbs so as to keep them erect. Afford the pots water from a fine rose-can, and then plunge the pots in coal-ashes and cover with about an inch of cocoa-fibre dust, or fine leaf-mould, in order to prevent evaporation of moisture, no more water being desirable until the leaves show through the covering, which should be removed and the plants placed near the glass in a greenhouse, with free air at all times, until frosts set in. The bulbs of lesser size may be grown on for affording flowers for cutting purposes, and the smallest may be planted thickly in pans or boxes to grow on for stock. Batches for succession may be potted later.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Celery.—If Celery be required for consumption in the month of September, the plants will now be fit to receive the first earthing-up. Before the actual earthing-up for the first time is begun, all suckers, decaying leaves, as well as weeds, should be removed. The earthing-up of Celery should be attended to at intervals of about ten days, according to the growth made in that space of time. Unless rain fall, water should be copiously applied alternately with weak manure-water. In earthing-up, the soil made use of should be pulverised by blows of the spade or crumbled in the hand. Whilst the job is being carried out, the leaves of the plants should be held in position with bast-ties, or a continuous cord passed round each plant and fastened to a stake at each end of the row. In putting the mould round the plants, do not press it too firmly, or the heart-leaves will not have space in which to develop, causing mis-shapen stalks. As soon as the moulding-up is finished, let the ties be removed. The main crop of Celery must not suffer lack of water at this season, or it will not be tender eating. If there are plants for

which no room can be found in trenches, let them be planted on the flat; they will prove useful for culinary purposes.

Vegetable Marrows.—Since warmer weather set in, the plants have made strong growth. The bine should be spread out regularly, and kept in position by means of stout wooden pegs. Unless for exhibition purposes, Vegetable Marrows should be removed from the plants whilst still small; that is, half grown or less. Plants growing in rich soil will need no extra feeding, merely mulching with straw to prevent flagging. Backward plants may be afforded copious applications of manure-water.

French Beans.—Another sowing, the last for the season, may be made about July 24, sowing on a south or south-west border. The soil should be moderately rich, and the seeds should be steeped in water for a few hours previously to sowing them. Sow thinly in rows, 2½ to 3 ft. asunder, and sprinkle the soil, and subsequently the plants, with water every evening. Where indoor cultivation can be afforded, a sowing may be made in flower-pots about the first week in the month of August. These may be stood out-of-doors till the middle of the month of September, about which date it is advisable to house them. Canadian Wonder, Red Flageolet, and Perfection are fine varieties for sowing at this season.

Tomatos.—Although much depends on the character of the season whether these plants yield well or poorly, the amount of attention bestowed on them during the next few weeks has a great deal to do with success. The plants should be afforded manure-water in moderate quantities when the fruits are swelling, affording manurial mulchings if the soil is light and poor. The side shoots should be removed a few at a time. The plants should be syringed daily in fine weather till the fruits are set, and a few of the leaves may be removed to expose the fruit if shade is too dense.

Carrots.—A sowing of Early Nantes, Scarlet Model, and Paris Forcing, may be made at this date for drawing from, if the earlier sowings should turn out coarse, but about which it is too early to form a just opinion. If the soil be infested with wireworms, it should be dressed with fresh soot, wood-ashes, and slaked lime, before digging; and heavy soils should be dug, and road-scrappings and fine mould incorporated with the surface-soil. As the roots of the Carrot do not grow to a large size from these late sowings, the seeds may be sown moderately thick. The seed-drills should be about 10 inches apart, and 1½ inch deep.

THE APIARY.

By EXPERT.

The honey season so far has not been a success, and we might call it a "swarming season." When swarms have not been returned no honey has been taken off, and the bee-keepers are not very well pleased. It is a great pity where honey is required not to return them; as we have pointed out before, one cannot get swarms and returns in sections, or in run honey as wells. A general complaint again is that the enormous amount of sections spoiled through the queen getting into them and breeding in them, rendering the sections useless. The cost of a sheet of "queen excluder zinc," placed on the top bars to prevent the queen and drones getting up, is soon repaid, if you reckon two sections spoiled, and the cost of the excluder only 10d. or 1s. Another great advantage is, that you can take away the sections with little risk of damaging them, and knowing at the same time that the queen-bee is in safety below.

Taking sections.—Care should be taken not to put the fingers through the top of the sections when taking them off, because all sections so damaged are useless for sale; and the sections taken should in no case be laid down, but be kept up the same way they are taken from the hive, because honey in the cells which are not sealed over will run down over the section and spoil it.

Sale of Honey.—Owing to the bad weather, sections if good are sure to be dearer, so that any bee-keeper with a large stock of honey of good quality should be able to find a ready market, at a much better price than last year; at the same time it is of no use to keep them for any length of time, but let them go when a good price is offered, particularly so when only an indifferent place is available in which to store them.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 24.—Tibshelf Rose Show.

WEDNESDAY, JULY 25.—National Carnation and Picotee Society's Exhibition, at Crystal Palace.

Durham, Northumberland, and Newcastle Horticultural Society's Show, at Newcastle (3 days).

THURSDAY, JULY 26.—Rose and Horticultural Show at Bedale.

SALE.

FRIDAY, JULY 27.—Imported and Established Orchids, at Frotheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—63°4'.

ACTUAL TEMPERATURES:—

LONDON.—July 18 (6 P.M.): Max. 85°; Min. 58°.

July 19: Fine, hot.

PROVINCES.—July 18 (6 P.M.): Max. 81°, Ipswich; Min., 58°, Shetland.

Horticultural Education.

THE report, for the present year, of the examiners in horticulture appointed by the Royal Horticultural Society, is before us, as well as the syllabus of work at the Horticultural College, Swanley. It is pleasing to find much less objection raised to examinations than was once the case. Their true function and importance are becoming more evident, and people are ceasing to expect the immediate and direct results from them that once they did. In the list before us we find that Miss E. WELTHIAR-WINLO of the Horticultural College, Swanley, succeeded in attaining the full number of marks (300), that several obtained over 280, while no fewer than 141 out of 236, or nearly 60 per cent. obtained over 200 marks, and were placed in the first class.

Only a few years ago any one of these 141 candidates would have been supposed by the thoughtless to have given evidence of their competence to undertake the charge of a garden. All that the examination really shows is that the students have been diligent in making use of their opportunities, that their attention has been directed into the proper courses, and that they have been generally well taught. This is all that we have a right to expect; and when we find so large a proportion as 60 per cent. in the first class, we may be very well satisfied indeed. The examination-syllabus shows to what points attention should be specially directed, and the mental discipline entailed in systematically reading and working with a definite aim, even though that aim be merely the passing of an examination, is of incalculable value.

The examiners give a hint which, in our experience, we are sorry to say, is almost always necessary:—"Many [of the candidates] branched off into extraneous matters not required in reply to the question at all. It is important that they should keep strictly to the text of the questions." We never knew an examination yet, and we have endured many, both as examinee and as examiner, in which this concentration of effort was not more or less deficient. Generally it arises from inability to answer the question properly, the time it is thought must be occupied, the paper filled, and the candidate fills up his paper "somehow." He would do better to retire at an early stage, or better still, such a candidate should never have entered the examination-room. It would be a good thing if the tutors would institute a preliminary examination of their pupils, and not suffer those who are clearly incompetent to answer questions properly to take up the time and exhaust the energies of the examiners. In this particular, the students who have had some training in colleges or schools have a very great advantage over those who have picked up their knowledge from books alone, or from such experience as they may have attained during the course of their every-day work.

The connection between the tuition given and the examinations which the candidates are invited to undergo, and the practical work of the garden, is apt to be misunderstood.

The real object is to explain and illustrate the work done by plants, and the manner in which the gardener utilises that work for his own purposes. It is no part of a horticultural college to send out botanists, or chemists, or geologists, but rather pupils whose intelligence has been so trained that they can apply practically in the garden what they have learned in the class-room and laboratory. They thus become not garden labourers, but gardeners in the best sense of the term. The examinations supply a test whether the intelligence of the pupil has been trained in the manner we have indicated.

Some would, at this stage, add to the written examination some practical tests of ability to perform the common operations of gardening. This practical test we think should come at a later period, when the candidate has had some practical experience. Then would be the time to ascertain how far he had profited alike by his experience, and his ability to apply the instruction he has received in the principles of the art. Experience alone is no doubt valuable to the individual, but unless it be associated with trained intelligence, it does not benefit the art, or contribute to its progress.

We append the syllabus of practical work as carried out at Swanley, merely adding that it is associated with instructions in general principles:—

First Year's Practical Work.—Use of garden tools. Levelling. Formation and care of paths, beds, and lawns. Preparation of soils, trenching, digging, hoeing and raking. Mowing, sweeping and rolling. Manures, their preparation, storing, and methods of application. Weeds, their duration and means of eradication. Planting and growing vegetables, selection of varieties, gathering and storing. Fruit culture, planting, pruning, gathering and storing. Sowing seeds and growing stocks of plants, &c. Budding and grafting. Root and branch pruning.

Second Year's Practical Work.—Preparation of seed-beds and hot-beds, sowing seeds, transplanting and thinning. Propagating, growing and planting

hardy, stove and greenhouse plants, &c. Preparation of manures and composts. Potting, staking, tying and watering. Care of houses, frames, pits, &c. Ventilation, stoking, care of ferneries, herbaceous borders, shrubberies, Rose-garden, and bedding-out, annuals, &c. Growing vegetables, salads, &c. Earthing, blanching, &c. Training fruit-trees, and hardy climbers on walls, &c. Saving seeds, &c. Market crops:—Propagation, growing, picking, packing, market-bunching and marketing. Forcing fruit and vegetables. Advanced pruning and propagating.

Practical Instruction is also given in jam-making; bottling and preserving fruits. Bouquet-making and table decoration, carpentry, repairing, painting and glazing glasshouses, &c.

Third Year's Practical Work (in course of arrangement).—Further specialisation in the foregoing. Growing special classes of plants. Hybridisation, garden-design. Labelling, &c. Selection of varieties. Rotation of crops. Teaching and supervising the work of elementary students while in charge of glasshouses, &c.

IN our last issue we gave an outline of the history of the Sweet Pea from its introduction to the

Sweet Pea. present time. Messrs. CARTER have circulated a similar document based on the same materials that were at our disposal, together with some details as to the share that the firm of JAMES CARTER have had in its improvement. The earliest date mentioned by Messrs. CARTER is 1837, and in 1845 to 1849 the firm offered a new striped Sweet Pea, and a new large purple variety. From that time till 1860 little seems to have been done till the last-named year, when a blue-edged variety was brought out, and said to have been a true cross between the annual white Sweet Pea and the perennial Lord Anson's blue. Were it not that the name of Col. TREVOR CLARKE is mentioned as the raiser, we should not have attached much importance to the statement. It is not mentioned in Dr. FOCKE's standard book on *Hybridisation*. Scarlet Invincible was sent out by Messrs. CARTER in 1865; Princess of Prussia, with rosy-lilac flowers, was distributed by Mr. C. SHARPE in 1871; then came Violet Queen, sent out by Messrs. CARTER in 1878, with a coloured illustration, a forerunner of the large-flowered types now common.

No doubt other firms could add to the list supplied by Messrs. CARTER. The development of the Sweet Pea in modern times is specially due to Mr. ECKFORD, at one time gardener to Dr. SANKEY, a great florist, and the results of his labours are now everywhere manifest. The dwarf forms, of which Cupid was the first, hail from America. They are good for pot use, otherwise they have little or no advantage over the taller-growing sorts.

In addition to the colour and size of the flowers there is some variation in the colour of the seeds, and Messrs. CARTER tell us that Violet Queen has angular instead of round seeds. These variations are very interesting, as they occur in a plant which has not been hybridised by crossing with another species, unless the blue-edged variety was really the offspring of a cross. Another point we wish to emphasise is, that so far, no bud-sport has been produced; indeed, we cannot trace any such sport in any annual plant whatever.

We had an opportunity of testing this matter when examining lately the collection of varieties on Messrs. HURST & SON's seed farm at Kelvedon. Here over 200 varieties were seen growing side by side, so as to enable some sort

of classification to be made, and to facilitate the estimation of the comparative merits of particular flowers. Among the best we may mention —

ORANGE COLOURED VARIETIES.

Gorgeous is one of the best, although it has only two flowers in a spike, when a self-respecting Sweet Pea should have three; the standard in this variety is nearly circular, clear orange-pink, while the wings are rose-pink.

Lady Mary Currie is very similar, but rather less orange, and the contrast between the colour of the standard and of the wings is more pleasing.

ROSE-COLOURED VARIETIES.

Royal Rose is a fine bold flower, with deep rose standards of good form, and wings pale rose.

Triumph is a rose-coloured flower, the wings having a bluish shade.

Countess of Lathom is a pale rose flower; the standard and wings slightly incurved.

Coronet is a white flower, traversed by a network of rose-coloured veins; standard circular, bold.

Lovely deserves its name, for the beauty of its light pink flowers. Technically the standard is not of such good form as in some other varieties, but we doubt if the public will think any the worse of it for that.

America has white flowers thickly striped with lines of pink; if the stars are not visible, at least the stripes are clearly so. It will be useful for variety sake.

Earliest of All has rose-coloured standard, and white wings. A charming flower.

Prince of Wales is of a deep rose colour. A very fine variety.

Prince Edward of York is similar, but with more orange in the standard.

Chancellor is a variety with pink veins traversing a white ground; the standard is bold and circular.

DEEP RED OR MAROON-BLUES, &c.

Mars is a very fine flower, glowing red with bold standard, and purplish wings.

Captivation is of a purplish tint, with rosy-purple standard, and violet wings.

Navy Blue has bluish-purple standard, and violet wings. A very handsome variety.

Othello is a dark maroon; its standard is not always technically correct, but personally we should not object to it on that score. It should be in every collection on account of its colour.

Princess of Wales has a lilac network of veins on a white ground, giving a mottled appearance.

Emily Eckford is of a pale violet colour, very delicate.

Lady Grizel Hamilton has light lilac flowers, of large size and much beauty.

YELLOW TO WHITE.

Mrs. Eckford is a very pale primrose flower, of great beauty.

Lottie Hutchins is a creamy-white, with a few pinkish blotches.

Sir George White is a good example of the white-flowered class, but scarcely so fine as *Sadie Burpee* — a very fine white flower with the conventional standard, one of the finest of all the varieties.

As the present issue will be published before the show opens, we must leave further details till next week, but some idea of its extent may be formed by the fact that up to Saturday last seventy-eight exhibitors had announced their intention of being present, that they had made 590 entries and requisitioned 3607 vases. We do not envy the judges, as the distinctions between many of the varieties are infinitesimal. If the Conference would kindly eliminate half or even three-fourths of the names they would render a very great service to horticulture.

ROCKERY ORCHID-HOUSE AT THE ROYAL EXOTIC NURSERY, CHELSEA (Supplementary Illustration).—Few visitors to Messrs. J. VEITCH & SONS' nursery at Chelsea, fail to inspect the Orchid rockery-house, which forms a kind of ante-room to several houses in which Orchids are cultivated. The central mass consists of rockwork, which affords resting-places and pinnacles, on which Orchids in pots, pans, and baskets can be deposited in order to show the flowers to the most advantage. Around the sides are other rocky masses erected in a similar manner, wooden staging not being much employed in the house. As the seasons change, so do the contents of this house change with them, plants in bloom being brought from other houses as fast as those in the rockery pass out of bloom. The floral effect is heightened by the introduction of foliage plants in variety, such as *Begonia*, *Cissus discolor*, *Pothos argyræa*, Ferns of dwarf growth, *Philodendron* in variety, *Pellionias*, *Tradescantias*, and *Calatheas*, which are in most instances planted about on the rockery.

"HARDY FLOWERS."—A sixth edition of this little volume has just been issued, and is published at *Gardening Illustrated* Office, 37, Southampton Street, Strand, W.C. It was, we believe, in its original form, the first, or almost the first, of Mr. ROBINSON'S books on similar subjects. The introduction should be read by every garden-lover. The text is an alphabetical and detailed catalogue of a selection of the most attractive herbaceous plants. *Chionodoxa*, *Heucherasanguinea*, the beautiful *Incarvillea*, and many handsome plants, are however omitted. The Pampas-grass is still called *Gynerium*. The hardy Bamboos scarcely receive such attention as they deserve, nor are the hardy *Nymphæas* of M. MARLIAC mentioned. The numerous selections of plants for various purposes form a valuable feature of this book. Although experience is the best teacher, yet hints like these save time, and render the acquisition of experience the more rapid.

IMPORTATION OF PLANTS FROM ABROAD.

A complaint having been made, says the *Times*, by a correspondent that postal packets containing plants tendered at Swiss post-offices for transmission to England were being refused on the ground that the plants would not be permitted to enter England, the Secretary of the Royal Agricultural Society of England placed himself in communication with the Board of Customs on the subject, and has now received the following reply:—

"Custom House, London, June 30, 1900.

"SIR,—I am directed by the Commissioners of Her Majesty's Customs to inform you, in reply to your letter, dated the 25th inst., that, so far as this department is concerned, there is no objection to the importation of plants from Switzerland.

"A representative of the Swiss Consulate who has been interviewed by an officer of this department on the subject, states that there are no regulations governing the exportation of plants from Switzerland, adding that he had seen statements in the newspapers to the effect that the English Post Office was refusing to receive flowers from certain places abroad, and mentioning Cannes as one of the places coming under these restrictions. So far as the Swiss Government is concerned, there is no impediment to this traffic at the frontier.

"From inquiries which have been made at the General Post Office, it appears that there are no restrictions imposed by that department upon the transmission of plants and flowers from abroad, either through the parcel post or the letter post, but that flowers are refused when tendered for transmission through the sample post. Some time since an arrangement was made, in the interests of growers in the South of France, under which flowers were admitted through the sample post; but at the last Postal Convention it was agreed that this concession should not be continued.

"The revised regulation has resulted in the refusal of a large number of packets presented for transmission as samples, and the impression seems to have been made on the public mind that the importation of flowers through the post is not allowed.—I am, sir, your obedient servant,
"Sir Ernest Clarke."

"R. HENDERSON.

"FLORE DE LA FRANCE."—The Abbé COSTE has just issued, through PAUL KLINCKSTECK, 3, Rue Corneille, Paris, the first part of a descriptive and illustrated *Flora of France*, which we hasten to bring under the notice of our readers, to whom a

Flora of France is a desideratum. The classic work of GRENIER and GODRON is half a century old, and is now rarely to be met with. The present publication, then, clearly supplies a demand, and the more perfectly, that each species is illustrated by a small but particularly clear woodcut. The only objection to these cuts is, that there is no scale attached to them. In the text neither synonyms nor references are given, a circumstance that will in a measure detract from the value of the book in the eyes of professional botanists. What we have is a clear, well-drawn description of each species, with the distinctive characters marked with italic type. The localities, including those in Corsica and Savoy, are mentioned, as well as the general distribution of the plants, and in some cases an indication of the medicinal or other properties. The work will be indispensable to botanists studying the flora of France, and as so many of the species now find a place in gardens, the cultivator of hardy plants will find it requisite to possess it.

HYBRID SEMPERVIVUM.—As we noted last week, Mr. LINDSAY, of Murrayfield, has kindly sent us specimens of a hybrid between *S. tectorum* and *S. arachnoideum*. The general habit is that of *S. tectorum*, but the rosettes of leaves are not so large, and the tips of the individual leaves are matted together with a fine net-work of white hairs, as in *S. arachnoideum*. We have no flowers of *S. tectorum* at hand to compare with those of the hybrid, but comparing them with those of *S. arachnoideum* they are larger, densely covered, both on sepals and petals, with glandular hairs. The petals are dull, cloudy pink, and the anthers yellowish-red on pink filaments. The filaments are glabrous, and the carpels nearly so. In *S. arachnoideum* the petals are clear rosy-pink, the anther lobes yellow, deeply edged with black, and the carpels slightly glandular-villous.

"PLANTÆ THONNERIANÆ CONGOLENSIS."—Par E. DE WILDEMAN et TH. DURAND. (Bruxelles, OSCAR SCHEPENSET CIE., 16, Rue Treurenberg). M. FRANZ THONNER, in a recent volume devoted to the results of his travels in Upper Congo, included in the form of an appendix the list of the plants that he collected on an excursion into the Bangalas district, and announced that a more complete account of the botany of the neighbourhood would be published later—it is comprised in the book above-named. Dr. DE WILDEMAN, Assistant Naturalist at the Brussels Jardin Botanique, and Secretary of the Belgian Microscopic Society; and M. TH. DURAND, Keeper of the Jardin Botanique de l'État of Brussels, are already well known for their works in connection with the flora of the Congo, so that the contributions of M. THONNER could not have been brought out more favourably; and the *Plantæ Thonnerianæ Congoleses* forms an important text-book to the knowledge of the plants of the Congo and of their dispersion. As the authors remark, of the 120 plants that the collection includes, a fiftieth part have never been discovered within the limits of the independent state, and of these species twenty-three or twenty-four varieties are new to science. M. THONNER's success is not attributable to good fortune only, as besides being an undaunted explorer, he is also a skilled botanist, and able to make from the plants before him a wise selection, rejecting well known species, and devoting himself to those that are rare. The preface of the book gives M. THONNER's itinerary, and is followed by a description of the writer's travels, and of the country visited. In the actual book, the joint authors enumerate systematically the names of the plants collected, and give numerous bibliographic references, and mention the distribution of the species in districts other than the Congo. M. THONNER also gives figures of the new species brought home by him; many of these plants are, naturally, named after him. The illustrative plates are the work of M. D'APREVAL, and show many plants not merely of scientific interest, but of others that also might well be introduced into cultivation.

SEQUOIA GIGANTEA.—A paragraph is going the round of the papers referring to the height of the Wellingtonia in the Kerseley House estate, near Coventry. The tree is said to exceed in height the specimen at Chatsworth. Unfortunately, in the records of the Conifer Conference, no mention is made of the tree in either locality. A tree at Strathfieldsaye was measured by Mr. MCHATTIE last autumn, and found to be 82 feet in height. The tallest specimen, out of eighty-six returns mentioned in the *Conifer Conference Report* (1892), is one at Shanbally, Tipperary; but there is a discrepancy between the detailed statement on p. 561 and the summary at p. 571, which throws some doubt on the correctness of the measurements.

VINES AND VINE-CULTURE.—We are pleased to see a fourth edition of Mr. BARRON'S book on this subject—(12, Mitre Court, Fleet Street). A few additions have been made to the book which remains the best practical guide to Vine-growing that exists in the language. We regret to find Mr. BLACKMORE'S provisional name of "Diphtheritis" retained for what the French call *brunissure*, or browning, and which is considered to be due to the presence of a slime-fungus or Myxomycete. It is well figured in Viala's *Maladies de la Vigne*, a copy of which is in the Lindley Library. As to Mr. BARRON'S book, it is one which every gardener should make a point of possessing.

"BEN CANT."—Rosarians especially will lament the decease of this eminent Rose-cultivator, who died at Colchester on July 17 in his seventy-fourth year. He was a great cultivator and exhibitor. More than 2000 prizes, including the National Rose Society's Trophy on no fewer than nine occasions, fell to his share. Three of the best Roses, Gloire de Dijon, General Jacqueminot, and Jules Margottin, were, according to a statement in the *Rosarians' Year Book* for 1886, distributed in 1853 by Mr. CANT, and gave him his first start in life. Mr. CANT was almost exclusively a rosarian, and at one time grew them exclusively in the open air. We used to see him occasionally at the Rose Society, though he took little interest in horticultural affairs outside his business, but was greatly respected by his many friends, and no man enjoyed a better repute.

THE WIG PLANT.—At this season we often get specimens of this plant, *Rhus Cotinus*, the senders being naturally struck with the feathery character of the flower-stalks, most of which are abortive. The colour is generally greenish with a pinkish tinge, but Mr. ANTHONY WATERER sends us a spray of a comparatively deep purple colour. The bark of the shoots partakes of the same colour. The leaves too are smaller, and rounded not tapering at the base. The variety is eminently deserving of attention.

TRANSCERENCE OF BUSINESS.—Messrs. J. R. PEARSON & SONS, who have been engaged for some years in establishing a new nursery at Lowdham, Notts, are now removing entirely from Chilwell, where the firm has carried on business for a century or more, to the new quarters. In order to allow of increased attention being given to fruit-trees and Roses, Messrs. PEARSON propose to discontinue the cultivation of zonal Pelargoniums, and of all greenhouse plants, cut flowers, &c. The area included by the new nursery is 100 acres, and is situated in a purer, better atmosphere than obtains at Chilwell, since so many factories and other buildings have been erected in the locality.

METROPOLITAN OPEN SPACES.—We understand that a member of the well-known Lloyd family in the suburbs of Walthamstow, has presented the Walthamstow Urban District Council with the fine mansion called "The Winns," and 9½ acres of land attached thereto. The estate will be used—the house as a museum, the land as recreation ground. These will be thrown open to the public some time in August.

STOCK-TAKING: JUNE.—The Board of Trade returns for June show a continuance of the busy

times previously recorded; albeit the Chancellor of the Exchequer finds his calculations a good deal out of line with his latest Budget figures. The total value of last month's imports is £42,016,307, against £38,348,943 in June, 1899; an increase of £3,667,364. The decreases are £292,542 in articles of food, dutiable; tobacco falling off by £23,037; manufactured articles figure at £78,504. The heaviest items of increase are £1,765,907 in articles of food and drink, duty free; raw materials, £1,185,671; metals, increase by £530,856; and raw materials for textiles are in excess by £391,672. The following are the usual extracts from the "summary" table:—

IMPORTS.	1899.	1900.	Difference.
	£	£	£
Total value ...	38,348,943	42,016,307	+3,667,364
(A.) Articles of food and drink—duty free ...	14,243,992	16,009,899	+1,765,907
(B.) Articles of food & drink—dutiable	1,673,858	1,381,316	—292,542
Raw materials for textile manufactures ...	3,753,018	4,144,630	+391,612
Raw materials for sundry industries and manufactures	5,106,174	6,291,845	+1,185,671
(A.) Miscellaneous articles ...	1,083,896	1,378,167	+294,271
(B.) Parcel Post ...	78,647	82,574	+3,927

Coming now to the imports of fruits, roots, and vegetables, one may note that favourable accounts reach us as to the prices obtained for the past season's imports of fruit. Growers and salesmen being satisfied with their returns, and the purchaser with what he invested in. The following are the figures in the section alluded to, and the difference in value will be noted with interest:—

IMPORTS.	1899.	1900.	Difference.
	Bushels.	Cwt.	Value.
			£.
Fruits, raw:—			
Apples ...	62,424	16,269	—6,742
Apricots and Peaches ...	.....	2,074	+4,752
Bananas... bunches	.....	124,816	+58,813
Cherries... ..	129,655	118,891	+86,466
Currants ... ..	.....	6,668	+16,152
Gooseberries ... ..	.....	16,574	+8,736
Grapes	5,325	457	—8,034
Lemons	155,716	74,980	—13,992
Nuts—Almonds (cwt.)	2,657	2,019	+1,652
Others, used as fruit (value) ...	£30,176	£31,503	+1,327
Oranges	340,495	182,620	—12,503
Pears	56	345	—526
Plums	7,401	10	—5,222
Strawberries ... ..	.....	39,052	+61,104
Unenumerated... ..	216,744	7,385	—112,319
Vegetables, raw:—			
Onions bush.	325,508	475,018	+15,053
Potatoes cwt.	1,629,050	1,533,300	+3,234
Tomatoes ... ..	.....	123,032	+123,960
Vegetables, raw, unenumerated value	£237,427	£80,927	—156,500

The total British imports for the past six months of the year are placed at £255,656,999, against £236,736,876 for the same period last year—an increase of £18,920,123.

THE EXPORT

side of the returns continue to compare favourably with the figures for last year. Thus, in the past month the value of these was £24,895,335, against £21,980,067—an increase of £2,915,268. The principal items of increase were in ships, new, £1,189,774; raw materials, £1,364,259; metals, and articles manufactured therefrom, £499,351; whilst apparel and articles for personal use foot up at £58,641, and so forth. The value for the six months just ended is £144,376,764, against £126,521,894, for the same period last year—an

increase of £17,854,870. Possibly the Cape may take up the tale of exports from this date—the loss in Chinese will leave much lee-way to make up.

WARGRAVE GARDENERS.—At the monthly meeting held on Wednesday evening, July 11, Mr. W. H. SCOTT, gr. to Captain COLERIDGE, Twyford, read a practical paper on "Gloxinias." He described the varieties, cultivation, soil, enemies, and different modes of treatment to secure the best results, and paid a high tribute to the late Mr. JAMES MARTIN, to whose skill as a hybridist many of the improvements in the flower and plant were due. A long discussion took place, and a vote of thanks was accorded Mr. SCOTT for his useful and instructive paper. The exhibits comprised Sweet Peas, and a tray of vegetables, by Mr. FINCH; Turnips, by Mr. ROBBINS; Petunias, by Mr. FULLBROOK; and a fine group of Caladiums, by Mr. POPE, for which he was awarded a Cultural Certificate.

EXPERIMENTS WITH GRASSES AND FORAGE PLANTS.—The Agrostology Division of the United States Department of Agriculture has published a *Bulletin*, by Dr. P. B. KENNEDY, on the result of co-operative experiments with grasses and forage plants. The object of these trials is "to introduce into cultivation native and foreign varieties of grass and forage plants that are suitable for certain purposes or conditions. Some plants have been found to be excellent drought-resisters; others, on account of their strong creeping root-stocks, are found to be well adapted to bind the drifting sands of our coasts and lake shores; while still others have the power to resist the trampling of stock, and are valuable for reclaiming the cattle ranges of the great West. Demands come from the South, where the land has become exhausted by continuous growing of cotton, for forage plants that will restore the fertility of the soil. There are large tracts of land in the country where the soil is so alkaline, that the cultivated grasses will not grow on them. By the introduction of salt-bushes on these lands, a nourishing forage can be produced which is liked by all kinds of stock. Other requests are made for trial packages of seed suitable for lawns, golf-links, fair-grounds, and parks, in all sections of the United States. The climate and soil conditions of the country are so varied that much study, observation, and experimentation are necessary in order to meet the needs of the different sections, and to carry on a wise, useful, and economical distribution." It is pleasant to hear how well this scheme was supported, and that farmers to the number of 1,713, in all parts of the United States, complied with the request for a report as to their success or failure with the seeds distributed to them. It must have been no small task to classify and tabulate the results of such varying trials, as has been done in the pages now before us.

STANGERIA PARADOXA.—Mr. W. H. LANG, in a paper in the *Annals of Botany*, shows that there is a close agreement between this plant and other Cycads in the development of the ovule, pollination, fertilization, and embryogeny. Two ciliated spermatozoids are formed in the free end of the pollen tube.

EMIGRATION TO THE COLONIES.—We learn from the latest Circular issued by the Emigrants' Information Office, 31, Broadway, Westminster, S.W., that this is the best season of the year for emigration to Canada, where the chief demand is for farm and general labourers, skilled miners, and female domestic servants.

In New South Wales there is no demand for more emigrants, except female servants, competent men for farms and vineyards, and occasionally for a few blacksmiths and carpenters.

In Victoria, the increase in the values of exports and imports in 1899 shows the increasing prosperity of the colony. The Government is about to establish a Department of Labour. There is a good demand, which is likely to continue, for a limited number of thoroughly skilled plumbers on the Melbourne drainage-works; otherwise, there is

not much improvement either in Melbourne or throughout the colony in the general demand for labour. General female servants are in good demand.

In South Australia there is a good demand for agricultural labourers, for men able to work binders and strippers, for boundary riders, and for married couples without children for stations. In Queensland there is a good demand for farm-labourers and domestic servants, to whom free or reduced passages are being granted.

In Western Australia the chief demand is for miners, farm-labourers, and for female domestic servants. It is difficult for clerks, accountants, book-keepers, and that class of labour to find employment. There is a marked scarcity of farm labour in many agricultural parts in the south-west of the colony, such as Perth, Northam, Newcastle, &c.; and for some time to come there is likely to be a good opening for this class of labour. Employment, however, is not permanent in all parts, and in the extreme northern parts of the colony there is no demand.

In Tasmania there is no demand for farm labourers, unless they have a little money of their own.

In New Zealand, the building and engineering trades are almost everywhere busy, and there is also plenty of work to be had in the mines, saw and flax mills, clothing factories, woollen mills, flour mills, freezing works, brickyards, &c. Dairying and agricultural pursuits are generally prosperous, and occupy large numbers of persons; and unskilled labourers can, if they want to, nearly always obtain employment at rabbit-poisoning, scrub-cutting, bridge-building, road-repairing, fencing, or general farm work.

Persons are warned against going to South Africa in search of work so long as the war lasts. There are large numbers of persons there at the present time who are out of employment.

ROYAL PURVEYORS IN IRELAND.—We are requested by Messrs. C. RAMSAY & SON, nurserymen, seedsmen, and florists of the Ball's Bridge Nurseries, Dublin, to state that they have been appointed florists and nurserymen to Her Majesty the QUEEN in Ireland. Their nurseries in future will be known as the Royal Nurseries.

"NATURE'S GARDEN."—MR. WILLIAM HEINE-MANN will publish immediately *Nature's Garden*, by NELIE BLANCHAN. This book, which is practically a history of the life and habits of every well known wild flower, is superbly illustrated by 120 photographs of blossoms direct from Nature. Of these, fifty-six are beautifully reproduced in their natural tints, while the others are no less well done in black and white. The authoress treats her subject from a somewhat original standpoint, dealing with the relationship which undoubtedly exists between all flowers and certain insects which they either attract or repel. The book is written in vivid and untechnical language, and besides being an almost indispensable guide to the student of wild flowers, affords highly interesting and fascinating reading to every lover of Nature.

AGRICULTURAL BULLETIN OF THE MALAY PENINSULA.—The May *Bulletin of the Gardens and Forest Departments, Straits Settlements*, contains some valuable papers upon "Native Rubbers of the Malay Peninsula," "Insect Pests," "Bee-hawk Moth Caterpillars," "Para Rubber," "Kickxia africana," and "Injurious Fungi." There is also a plate illustrating certain insects.

"THE CANADIAN GARDENERS' AND FLORISTS' EXCHANGE."—This is a comparatively new publication sent out from London, Canada. It contains plenty of useful notes and hints, and is a trade journal, principally; quite up to date, and likely to prove a success if the bright style of the first few numbers is maintained in later issues.

THE LABOUR OF A SINGLE OAK.—Some curious facts are set forth concerning trees in an article by MR. FRANK FRENCH in *Scribner's*. A

single Oak of good size is said to lift 123 tons of water during the months it is in leaf. This moisture is evaporated and rises to form rain-clouds. All the trees are busy doing the same thing, and the rank Ferns and mosses and deep mould of the forest depths, acting as reservoirs for the rain which falls upon them, in their turn feed the springs and brooks. From this estimate of the labour of a single Oak, we can gain some idea of the immense force which the forests exert in equalising the evaporation and precipitation, and preventing periods of inundation and drought.

PLANTING IN TOBAGO.—The Imperial Department of Agriculture for the West Indies has lately published some hints and suggestions for planting Cacao in Tobago. According to the preface, by Dr. MORRIS, these notes were prepared many years ago by Mr. EDWARD R. SMART, and were published in a Tobago journal that no longer exists. Mr. SMART, however, being still in the island, lately offered these notes for reproduction, and they have been revised by Mr. J. HART, and issued in their present form. Other notes on other plants included in this little pamphlet were prepared by Sir ROBERT LLEWELYN, formerly administrator of Tobago, at present Administrator of the Gambia, West Africa.

DROPMORE GARDENS, MAIDENHEAD.—We are informed by the new gardener at Dropmore, Mr. J. A. ROGERS, that extensive alterations are being made in the gardens there. All the old glasshouses have been removed, and new ones are to be erected by Mr. JAMES GRAY, of Chelsea. In future the gardens and grounds will be open to the public on three days a week only, Mondays, Wednesdays, and Saturdays, from 11 A.M., until 5 P.M.

ROBT. FENN.—The serious accident that has befallen Mr. FENN, has pricked the consciences of some who seemed likely to ignore the disinterested services of one whose mission it has been, to use his own words, "to invent and grow Potatoes." Now in his old age he has met with a disaster which will probably materially disable him, so that a little timely help will be of great service to him. Mr. MILLIGAN HOGG, Mr. JOHN WRIGHT, Mr. POLLETT, Mr. PETTIGREW, Mr. PEED, and Mr. A. DEAN, have already contributed; and we shall be pleased to acknowledge and transmit any sums that may be sent to solace him in his disablement.

PUBLICATIONS RECEIVED.—From the U.S. Department of Agriculture, Division of Agrostology, Bulletin No. 22: *Co-operative Experiments with Grasses and Forage Plants*, by P. Beveridge Kennedy. From the University of Illinois, Agricultural Experiment Station, Urbana, March, Bulletin No. 57: *The Smuts of Illinois' Agricultural Plants*. From the Ontario Department of Agriculture, Toronto, March: *The San José and other Scale Insects*, prepared for the use of fruit-growers and scale-inspectors, by Wm. Loch-head. This includes descriptions and illustrations of the San José, the Ostreiform, or Curtis Scale; the Cherry, or Forbes Scale; the Putnam Scale, the English Walnut Scale, the Oyster-shell Bark louse, the Scurfy Bark-louse, and the New York Plum Scale. Botanical Department, Trinidad: *Bulletin of Miscellaneous Information*, April. Contains notes on the Cassava Fly, the Locust-disease Fungus, the Musk Melon, distance in planting, Sweet Cassava analysis, and West Indian and Guiana Ferns. Annual Report on the Straits Settlements Botanic Gardens for 1899, by H. N. Ridley, Director, chronicles a successful season. Ceylon Royal Botanic Gardens, Administration Reports for 1899, Part IV; Miscellaneous Report of Mr. J. C. Willis, Director. We learn that the "general condition of the two principal gardens has been much improved during the year, and that the extension of the scientific side of the department has also progressed steadily." Bulletin of the Botanical Department, Jamaica, March, April, and May. Edited by W. Fawcett. This contains articles on Teaching Agricultural Principles in Schools, Ensilage without Pressure, Diseases of Trees, Japan Wax and Varnish, Prospects of Cinchona, Fertilisers for Pine-apples, Vanilla, Parasitic Enemies of Cultivated Plants, Nature Knowledge Teaching, and Rice Culture in the U.S.—*Suggestions for New Industries*. Report of a visit to Kadur by John Cameron, F.L.S., Superintendent of Government Gardens in Mysore. West Indian Bulletin. The Journal of the Imperial Agricultural Department for the West Indies, vol. 1, No. 3; Contents: Agricultural Conference Reports (continued), Teaching Agriculture in High Schools, &c.; and Food Crops, Bee-keeping, and Diseased Plants.—Imperial Department of Agriculture

for the West Indies: *Hints and Suggestions for the Treatment of the Moth-borer in Sugarcane*, by H. Maxwell-Lefroy. According to the preface, by Dr. D. Morris, the Moth-borer is the most widely distributed and most destructive of all enemies of the Sugar-cane, and if the hints given in this little book were fully carried out, the planters would, within a short period, save hundreds of tons of Canes, and possibly also assist in keeping in check the rind fungus and other diseases. The three remedies to be employed are: 1, collecting the eggs; 2, destroying the moths; and 3, cutting out affected Canes.—*Proceedings of the Academy of Natural Sciences of Philadelphia*, 1899, part iii., October, November, December.—*Proceedings of the American Academy of Arts and Sciences*, June, 1900. Contributions from the Gray Herbarium of Harvard University; new series, No. XIX.—*Mexican Plants*, by M. L. Fernald.—*Nature Notes*, June.—*Bulletin de l'Association des Anciens Elèves de l'Ecole Nationale d'Horticulture de Versailles*, Année 1899. This includes, among other papers, a contribution by M. A. Ménéssier, on l'Enseignement Horticole à Kew.—Publications from the Board of Agriculture: *The Journal of the Board of Agriculture for June* includes among its contents articles relating to Some Local Conditions of Forestry in England, Fungoid Diseases of Roots of Fruit-trees, Consumption of Mure, Manuring of Potatoes, and Reports on Foreign Crops.—*The Agricultural Returns for Great Britain for 1899*, deal with the crops and live stock of the United Kingdom, British Possessions, and foreign countries. It is noteworthy that, as herein stated, "the acreage returned as under small fruit shows an increase of nearly 2,000 acres on the last two years. As was pointed out in the Report on the returns for 1897, the corrections then found necessary, from various circumstances, hinder satisfactory comparison with earlier figures under this heading. The acreage returned as occupied by orchards, which includes to some extent land bearing fruit-trees, but also entered as under grass or crops, now covers a total of 229,000 acres in Great Britain—a slightly larger area than in 1898. Both in orchards and small fruit, the greatest increase took place in Kent and Worcester, where the extension of the fruit-growing areas suggests that the industry remains successful."

PLANT PORTRAITS.

- ACACIA OBLIQUA, A. Cunn.—*Id. Select. Thénens*, t. xxi.
BRYOPHYLLUM CRENATUM.—*Revue Horticole*, July 1.
CAVENDISHIA PUBESCENS, Hemsl.—Differing from Thibaudia in the presence of two large bracts at the base of the flower-stalk, and other bractlets which are deciduous. *Id. Select. Thénens*, t. xxiv.
GRASSULA SCHWEINFURTHI.—*Hort. Dammann, Jr. Thénens*, t. xxii.
CYPRIPEDIUM ELLIOTIANUM.—*Wiener Illustrierte Gartenzeitung*, June.
LIGUSTRUM MASSALONGIANUM, Himalayas.—*Id. Select. Thénens*, t. xxv.
OLEARIA RUBESCENS.—*Id. Select. Thénens*, t. xxiii.
ROSE MADAME A. P. STRASSHEIM.—*Yellow. Rosenzeitung*, June.
ROSE SOLEIL D'OR, T.—*Moniteur d'Horticulture*, June.
ROSE SOUVENIR DE CATHERINE GUILLOT, T.—*Copper flesh. Rosenzeitung*, June.
ROSE SOUVENIR DU PRESIDENT CARNOT, H. T.—*Blush. Rosenzeitung*, June.
SALVIA SPLENDENS SILVER-SPOT.—*Moniteur d'Horticulture*, May 20.

THE WEATHER IN WEST HERTS.

DURING the past week the weather has been extremely hot, the shade temperature rising on five days above 80°, and on the 16th reaching 86°. The reading last mentioned is the highest I have yet recorded at Berkhamsted in the month of July. The ground has become very warm, but owing to the coolness of some of the nights, is not so exceptionally warm as might have been anticipated. The temperature at 2 feet deep is now 4° warmer, and at 1 foot deep 5° warmer than the July averages for these depths. On the 16th there occurred the heaviest fall of rain that we have had here in any one day since October last. But the strange part about this otherwise welcome rain was that it all fell in 16 minutes. The storm began shortly after 1.30 P.M., and when it ceased 16 minutes later the measurement amounted to 1.14 ins.—equivalent to a watering of 5½ gallons on each square yard of surface in my garden. This is by far the heaviest downpour for the time that I have yet known. For four minutes the rain was coming down at the rate of 7 inches an hour, which is also in my own experience a record. But to show how exceeding dry the ground had previously become, I may state that less than one-eighth part of the rainfall referred to, has come through the two and a half feet of earth in the bare soil percolation gauge, and only a few drops through that covered with short grass. During this thunder-storm, although there was no

hail, the shade temperature fell as much as 21°, viz., from 86° to 65°. Throughout the whole day the atmosphere was not only very hot, but also oppressively humid. The sun shone during the week on an average for over ten hours a day. *E. M., Berkhamsted, July 17.*

KEW NOTES.

DISA KEWENSIS SUPERBA.—Typical *D. kewensis* was raised at Kew from *D. grandiflora* crossed with *D. tripetaloides*, and flowered in 1893. Two years ago it was crossed again with *D. grandiflora*, and the result is now in flower in the cool Orchid-house. As might be expected from the parents, this new cross has larger flowers and a sturdier habit than *D. kewensis*, the flower being nearly twice as large. There are four flowers on a spike 20 inches high; the side sepals are 1½ by 1 inch, rosy-pink with a faint tinge of orange; the odd sepal or hood is 1 inch across, pale pink, conspicuously spotted with darker pink; petals green, with red spots. The name is a sufficient indication of the origin of the plant. There are three other secondary hybrid Disas, viz., *D. Diorens*, raised by Messrs. Veitch from *D. Veitchii* (*racemosa* × *grandiflora*), crossed with *D. grandiflora*. It would have been better had this been named *D. Veitchii superba*; the other is *D. Premier*, the parentage of which is a little more complicated, its parents being *D. Langleyensis* and *D. Veitchii*, so that its grandparents were *racemosa* (2) *tripetaloides* and *grandiflora*.

CYMBIDIUM HUTTONI.

To present-day Orchid fanciers this appeals as a new introduction, for although it was figured in the *Botanical Magazine* thirty-three years ago, and commemorates one of Messrs. Veitch's collectors, Mr. H. Hutton, it does not appear to have become known. Messrs. Veitch do not even mention it in their *Manual of Orchidaceous Plants*, and yet it is a handsome species, if the flowers are wanting in brilliancy of colour. An example of it, lately imported from Java, has been in flower for some time at Kew. It has ovoid, angular pseudo-bulbs 4 ins. long, each bearing a pair of broad, leathery, dark-green leaves 8 inches long. The flower-spike is pendulous, and bears ten flowers 1½ in. wide, the sepals and petals overlapping, the former dull brown outside, yellow-green inside, heavily chequered with brown, the petals uniform chocolate-brown, and the triangular lip yellow, with brown spots. It is a plant for the collection of the enthusiast.

NYMPHÆA "WILLIAM FALCONER."

This is one of three seedling hardy Water-Lilies distributed this year by Messrs. Dreer of Philadelphia. It is now in flower in the aquatic-tank at Kew, along with a selection of M. Mariac's seedlings, to which it is evidently very closely related; indeed, it might be called a form of *N. Mariacea ignea* as grown at Kew, the only difference being, that in the new seedling the segments are narrower, and their colour a shade deeper. Messrs. Dreer describe the flower as being "from 6 to 7 inches across, of an intense bright garnet colour, with a good ruby tone through it, intensified by the rich golden centre." The Kew flower is barely 4 inches wide, but the plant may produce larger flowers when it is stronger. I call it a first-rate *Nymphæa*, but it is a matter of opinion as to whether it is better than such sterling sorts as *ignea* and *gloriosa*. The other two, named "James Gurney" and "William Doogue," are also flowering at Kew, but they are not in a condition to be fairly judged. *W. W.*

OSTROWSKIA MAGNIFICA.

This plant is now flowering well in a sheltered corner of the herbaceous ground at Kew. It was discovered first by Albert Regel, son of Dr. Regel, who found it growing at an elevation of 7000 feet in Turkestan. In structure it differs very little from the genus *Campanula*, the chief distinguishing

characters being that *Ostrowskia* has its leaves arranged in whorls on the stem, and more numerous divisions to calyx and corolla. The plant appears to do best in a deep bed of good loam, and it requires very careful handling at the time of planting, the roots, which are tuberous and very brittle, being easily injured. It should be sheltered from excessive moisture during winter, when the plant is at rest. The Kew plant is about 4 feet in height, and has seven strong growths, each bearing four to seven blooms, broadly campanulate, 5 inches across, pale lilac, with darker veins. It is figured in *Bot. Mag.*, t. 7472. *A. H.*

NEW SOUTH WALES.

A WARNING TO BRITISH SCIENTISTS.

MY only object in writing this letter and asking you the favour of publishing it in your widely-circulated journal, is to warn many scientific friends in Europe against being tempted to contribute original essays on scientific subjects for certain prizes offered by the Royal Society of New South Wales, Australia. The leading newspapers in this country have published several letters from doctors and others—amongst them may be mentioned Dr. Andrew Ross, M.P., of New South Wales, and Dr. Jenkyns of Victoria—who have exposed the Council of the Royal Society for manipulating certain essays written by Australian original scientific writers. Dr. Ross, through the public press, asked the Council to put a stop to their proceedings, and to deal honourably with contributors' essays; and Dr. Jenkyns and other writers followed in a similar strain. The result of this correspondence has been that only one essay was forwarded to the Council for some of the recently-offered prizes. Now, I am informed by a late member of the Royal Society, that original scientific workers in other countries are to be invited to contribute original essays—hence this letter of warning.

The following, which is an extract from one of Dr. Jenkyns' published letters, will give your readers a good idea of the way some of the essayists have been treated by the Council of the Royal Society:—"I read the original circular (signed by two of the honorary secretaries) which was issued by the Royal Society, and I will, with your kind permission, give the title of the subject that original workers were invited to write about, and some facts in connection therewith, which came prominently under my notice. Title of the subject referred to—'On the effect which settlement in Australia has produced upon Indigenous Vegetation, especially the depasturing of sheep and cattle.' It was distinctly stated in the circular that the prize would not be awarded for a mere compilation, however meritorious in its way. In response to the circular, several essays were sent in from experienced men, botanists and explorers, and one country doctor well known for his extensive knowledge of Australian natural history. But you may judge of the great astonishment when it was announced that a school teacher had been awarded the prize, whose essay was not only a compilation from very numerous sources—which, indeed, the writer fully acknowledged, but was published by the Royal Society under an altered title to that for which the medal and prize were offered. The words that were omitted from the title when the essay was published are in italics, as follows: '*Especially the depasturing of sheep and cattle.*'

"I think your numerous readers will agree in saying that this omission materially affected the meaning of the subject which writers were asked to give their experience and observation upon. It is a well known fact that the leading Australian agrostologist named and described the forage plants and grasses for the writer, whose essay was awarded the prize, and that the latter largely compiled from the works of the former. I have

not yet written a paper for any prize offered by the Royal Society, therefore I am in no way prejudiced, but I think it is only right that the Council should give an assurance to the Australian public that for the future no essay will be awarded a prize that is published under an altered title to that for which a prize is offered. Those persons who do original work, and conscientiously write on any particular subject, have very little chance with those who are allowed to largely compile and write under an easily-adjusted title.

"At a recent annual meeting of the Royal Society of New South Wales, the retiring President bewailed the fact that seventeen members had withdrawn from the Society; and that the New South Wales public had not feted the members of the Australasian Association for the Advancement of Science when they met in Sydney the preceding year, under the auspices of the Royal Society. I read this in Melbourne, and considerable comment was made; but the Sydney public is evidently a wise and discriminating one." *V. H. W. Fawcett, D.Sc., &c., Sydney, New South Wales, Australia.*

GROWTH OF MESEMBRYANTHEMUM.

I HAVE never seen in any botanical book an illustration showing the curious growth of the little gems of the *Sphæroideæ* group, nor even a description of this growth in Harvey and Sander's *Flora Capensis*. This is the subject of the following lines and sketch.

Among a lot of a fine grey-coloured *Mesembryanthemum* I found the subject of my sketch (see fig. 9, p. 55). A part of one branch is cut off in order to make the course of the *Cyperus* leaves, which perforated it, visible. It is *Cyperus esculentus*, of whose bulb all natives of this country are very fond. They are, indeed, when the leaves become dry, of a very pleasant taste, and as they contain a high percentage of starch, they are very nourishing. The development and growth of this *Mesembryanthemum* are most peculiar, and I suppose it is the same in all members of the *Sphæroideæ* group. In a cavity of each of the two connate leaves, on the extremity of the stem, is placed generally one new branch, which grows through the whole dry season, and is so large that it falls out towards the end of the rainless season. The old leaves must be considered as the reserve stores for the young branches, as the dry, woody root does not go deep enough to be able to add to the growth of the young branches during the dry season. At that time the old leaves, formerly so fleshy, form only a dry, papery skin, which, as it is transparent, allows one to see the white vascular bundles that originally traversed the flesh of the leaves. With the first rains in November, the large golden-yellow flowers of the now full-grown branches expand as well as the fruit of the original branch. The plant is sought by the baboons as food. Haage & Schmidt, Erfurt, have received a large quantity of it, as well as the interesting *Anacampteros quinaria*, about which I made a note in the *Gardeners' Chronicle* of February 24 of this year, without then being able to give the correct name. *K. Dinter, Windhoek, German S.W. Africa.*

HOME CORRESPONDENCE.

LARGE FRUITS OF ROYAL SOVEREIGN STRAWBERRIES.—Having read in the *Gardeners' Chronicle*, of July 7, of Royal Sovereign Strawberry weighing 2½ oz., I should like to inform readers of this journal that I have gathered fruits of Royal Sovereign weighing 3 oz. good weight, from plants that were forced last year. *J. Osborne, Gardener.*

RUSCUS HYPOGLOSSUM is largely used in South Italy as *Asparagus*. The bit I send came from a garden at the baths of Ischia, where I saw long and wide borders of it. The proprietor called

it Asparagus, and shook his head unbelievably when I averred it was a Ruscus. But what puzzles me is the article in to day's *Gardeners' Chronicle*: it speaks of *R. aculeatus*, a British sort, as one of which the tips are used as Asparagus. Of course, I grow all three sorts of Ruscus—*aculeatus*, *racemosus*, and *hypoglossum*. The shoots of the latter will, I suppose, give a better dish of "Asparagus" than *R. aculeatus*; but what I want to know is, if it be worth while trying it in our climate for that purpose (hardly). In South Italy it was a most vigorous crop. R.

THE BUTCHER'S BROOM.—Half a century and more ago, when I lived on the border of Hainault Forest, huge bundles of Butcher's Broom used to be collected by men from London, who sold it to tobacco manufacturers, by whom it was used to sprinkle and damp the tobacco in leaf for some purpose of their craft—possibly, I think, snuff-making. What particular property this plant had that rendered it more suitable than any other I never knew; nor do I know if it is still used, or, as is more likely, has been superseded by mechanical contrivances. R. McLachlan.

IRIS OCHROAUREA.—This plant is mentioned on p. 32 of the *Gardeners' Chronicle* amongst flowers received from Mr. Smith, of Newry. It is now in flower in my garden, having been sent three years ago by Mr. Smith. It has the habit of *I. ochroleuca* (Lin.), syn. *I. orientalis* (Miller), syn. *I. gigantea* (Carr.). It is about 5 feet high, with bright golden flowers, similar in form to those of *I. ochroleuca*, but produced more freely. The last-named species flowers sparingly and irregularly in my garden. I understood from Mr. Smith that *I. ochroaurea* is a hybrid between *I. ochroleuca* (Lin.) from Asia Minor and *I. aurea* (Lindley) from the Himalayas. This seems to be the same hybrid as that mentioned on p. 22 by "W. L.," under the name of *I. aurea* var. *intermedia*, referred to *I. aurea* × *I. orientalis*. I may remark, however, that *Index Kewensis* gives the *I. ochroleuca* (Lin.) preference to *I. orientalis* (Miller), as the authorised name. On first reading "W. L.'s" note, it seemed to me to say that the seed which produced the hybrid was collected wild; this could not easily have happened, because the native districts of *I. ochroleuca* and *I. aurea* are quite distinct (see Boissier, *Fl. Orient.*, vol. v., p. 129, and Hooker's *Fl. of Brit. India*, vol. vi., p. 273), but on more careful reading I understand that the seed which produced the parent which produced the hybrid seed was collected wild, and that the two parents came in contact in Kew Gardens. C. Wolley Dod, Edge Hall, Malpas.

SPECIES OF IRIS FOR PLANTING AT THE WATER'S EDGE.—The best species for this purpose are those of the rhizomatic group, namely, *I. levigata*, *I. sibirica*, *I. hexagona*, and *I. fulva*. These species resenting disturbance at the root, should be planted in August and September, and allowed to become naturalised. H. T. M.

COTTAGE CLIMBERS.—Cash prizes offered specially to encourage the planting of cottage fronts in a semi-rural district are, perhaps, somewhat novel; but they have the merit of being badly needed. There is, perhaps, no department of gardening in which there is on the part of the amateur and cottager more neglect found than in this direction. In towns and their suburbs the introduction of the close-growing *Ampelopsis Veitchii* has proved a great boon; but even in such places it might be much more largely planted. In districts where the working-classes congregate, it is far too rare, and we find street after street of cottages with hardly a green leaf to be seen on them. But when just here and there a front is found fully and pleasingly draped with climbers, then how great is the attraction presented! I had just recently to award prizes generously offered by a Surrey gentleman for climber cottage fronts in his locality, but found very few to compensate for the trouble. In some cases advantage had been taken of the gentleman's liberal offer of suitable climbers through his gardener to obtain and plant them. Where but recently done, some two years must elapse ere any appreciable result can be seen. Still, it is a good form of beginning; and there is in this locality so much room for good effects. Amongst hardy climbers issued are *Roses*, *Honeysuckles*, *Clematis*, *Ampelopsis*, *Ivies*, *Jasmines*, &c. But it seems not to have occurred to the competitors that pending good growth on these hardy plants they

might have done much for the present year with the aid of *Cobæas*, *Eccremocarpus*, *Canary Creeper*, *Nasturtiums*, *Convolvulus*, and such things; or to employ only in a very limited way drooping plants in pots on brackets or hung on wires. Of these Ivy-leaf *Pelargoniums*, *Petunias*, *Begonias*, *Violas*, *Creeping-Jasmines*, *Campanulas*, and other such plants are very beautiful for such purposes. A. D.



FIG. 9.—*MESEMBRYANTHEMUM* BRANCH PERFORATED BY A GROWTH OF *CYPERUS ESCULENTUS*. (NAT. SIZE.)

A, Root
B, Stem
C, Young branches
D, Vascular bundles
E, Leaves
F, Fruit.

(See p. 54.)

APRICOTS.—In walking through the avenues of Covent Garden Market recently, and observing the presumably home-grown Apricots in the shops and stalls, I could not but be struck with the general pooriness of the fruit, and the utter absence of grading, half ripe, and wholly ripe, small and large, were all mixed together. The price per lb. was 6d. or thereabouts, not an inordinate price certainly for

the best fruit, but decidedly in excess of what the partially green and small fruits were worth. Knowing the amount of warm wall space going to waste, so to speak, on barns, farm-houses, and buildings, cottage-fronts having south or western aspects, and garden walls everywhere, it seems a matter for wonder that people do not grow Apricots by the hundred thousands of bushels. And no plant, excepting perhaps Ivy, furnishes a finer covering to an unsightly, or for that matter, to a slightly wall equalling the Apricot. It is handsome in bloom; when its fruits show golden among the leaves; and the foliage keeps of deep green colour till late in October. The skill required in managing the tree makes no more calls on the knowledge of the ordinary gardener or gardeners than do the Cherry, Apple, or Pear; and given a warm site, a holding soil, and an occasional root-pruning when too much vigour is evolved, with a rich mulch in July and August, and not at any other time, there is no fear that success will not follow in any county of England and lowland Scotland. There are two main reasons for the neglect of this phase of fruit culture, as well as for poultry farming, bee-keeping, Onion raising, &c., namely, the lack of fixity of tenure, or in other words the fear of being ousted from house and land at some other man's option either with or without compensation, as the case may be; and ignorance of the wealth lying at our doors in various occupations and cultures that are within the compass of the farmer, cottager, small owner, and allotment holder. South Wall.

FLOWERLESS STRAWBERRIES.—Though not common, instances are not rare of this failure of outdoor Strawberries this year. In our gardens, the variety Sir Joseph Paxton is the worst offender, both one-year and older plants being affected. The varieties Gunton Park, Georges Leseur, Monarch, and Alice Maude are others that have a number of barren plants. No doubt the drought of last summer contributed to this failing, June, July, and August having been comparatively dry months, and the summer heat exhaustive to Strawberry growth. The total rainfall here for these months amounted to only 4.37 inches. Mr. Castle would have a much wider range of variety under his care than come within that of the average gardener, and constitutions very much in Strawberries. In a bed of some six sorts, the variety Latest-of-All comes out much the best from all that were planted in August, and is carrying a good crop of fine berries. Sir J. Paxton alongside, and treated exactly the same, is not carrying half a crop. The next best in point of fruiting is Leader, and this furnishes some very fine berries on young plants, and a heavier crop on a two-year-old bed. A great many of the early flowers were cut off by frost, many of them unexpanded, and in young plants this has seriously reduced the prospect. This paucity of fruit has rendered leaf-growth in older beds very free and fine, and strong runners are thrown out in unusual numbers. On heavy soil I have seen Royal Sovereign very productive this season, on older more than on yearling plants. W. Struggell, Rood Ashton.

SOUTH VILLA, REGENT'S PARK.—The very fine examples of Dr. Hogg, Royal George, and Dymond Peaches, so richly coloured, which Mr. G. Kelf showed at a recent Drill Hall meeting from South Villa, Regent's Park, were of themselves admirable evidence of the capacity of London to produce good Peaches within two miles of Charing Cross. I called at South Villa a few days since, and Mr. Kelf kindly showed me his Peach-trees, which are growing in a range of rather lofty lean-to houses, and chiefly on semi-circular trellises, the trees in all cases doing finely, although it is, as elsewhere, needful to renovate both them and the borders from time to time. Some other trees are also grown on the back walls, but these do not produce such fine fruits as do the others, yet they fruit well. There is, of course, nothing whatever unusual in this Peach-culture under glass under ordinary conditions, but here the conditions are not ordinary. It is, indeed, doubtful whether what is here done would be possible were it not that the Regent's Park is a huge open space, and South Villa, with its grounds of some ten or twelve acres, greatly benefits thereby. Really, when once within the finely wooded grounds of this charming place, it is so difficult to realise that one is in the midst of the great metropolis of London. It is far more like what is found in some retired garden and park in the country. There is a big area of short grass to

keep in order, and trees and shrubs are dense and luxuriant. There are nice flower-gardens and good vegetable and fruit-gardens, and glass-houses in abundance, the conservatory being one of exceptional dimensions, and finely furnished. Mr. Kelf makes the very best of everything, and the place does him great credit. London fogs are his worst enemies, but these are rather less harmful here than they are more west and south. *A. D.*

COLLINSIA VERNA.—This pretty little annual is not so widely known as its merits deserve. Either as a pot plant in the greenhouse or when planted in the borders, it always invites attention. For pot culture the seeds should be sown in the month of September in 2½-inch pots, and as soon as the seedlings are large enough to be readily handled, they should be thinned to three or four plants in a pot. When the roots have partially filled the pots, the plants may be repotted in 5-inch pots, a size quite large enough in which to flower them. A suitable soil consists of loam, leaf soil, and sand, with a small portion of spent Mushroom-bed materials or artificial manure. The plants require support from neat stakes, and to be kept in a cold frame throughout the winter. In the month of February, bring the plants into a greenhouse, and they will soon come into flower. As a flowering plant for the border it would become a great favourite. The plant grows about 1 foot high, and has a compact habit; the flowers are white, with the lower lip of a lovely blue. Seeds may be sown in the autumn for flowering the following spring. *E. H.* [The plant was common enough in gardens not so very long ago. *Ed.*]

SWEET-WILLIAM ELIZABETH.—When walking through the gardens of Wrotham Park, Barnet, a few evenings ago, in company with Mr. Markham, the gardener, I came across a very striking mass of the new Sweet-William Elizabeth. This variety originated in the garden of Lady Enfield at Dancers Hill, and was exhibited by her ladyship at the Chiswick Hybrid Conference last year, when it received an Award of Merit. I have no doubt the warm salmon-pink colour of the flowers is attractive at any time of the day, but viewed in the soft evening light against a dark green background, I thought it unique. The plants are about 1½ ft. in height, of a branching habit, and free flowering. *C. R. Fielder.*

THE CULTIVATION OF HARDY FRUIT IN NORTH WALES.—According to present appearances the prospect of having good crops of hardy fruit is very satisfactory. In the south-western part of Merionethshire, and especially in this locality (Towyn), the crop of Apples promises to be exceptional. Here, as in many other districts in North Wales, the soil, situation, and climate, seem specially suitable to the successful cultivation of hardy fruit—Apples in particular. In many parts of Carnarvonshire, Denbighshire, and Merionethshire, I have seen Apples grown which, for size and form, would compare favourably with the produce of Hereford or Worcestershire, but unfortunately they often lack that brilliancy of colour so noticeable in the fruit grown in the counties mentioned above; still, taking this into consideration, Apples grown in the Principality compare very favourably with those grown in the majority of English counties. It is rather surprising that the generality of cultivators of North Wales are not more alive to the capabilities of their soil, the favourable climatic conditions, and to the advantages of having good markets near at hand, such as Aberystwith, Barmouth, Llandudno, Rhyl, and other fashionable seaside resorts, where good prices can be obtained for sound fruit. At the present time retailers obtain the bulk of their supplies from the English counties, principally through the medium of the London and provincial salesmen, which fact, coupled with the railway company's charges for carriage, &c., greatly enhances the price to the consumer, so that from this point of view alone, the advantages of local-grown produce would be unquestionable. Unfortunately, fruit-growing for profit does not claim the serious attention of many in the northern part of the Principality, which is surprising, considering the local advantages and possibilities. In many of the valleys of North Wales the cultivation of Apples could, I am sure, be made a profitable undertaking. Sites for the formation of orchards should be carefully selected, and planting done judiciously, planting only those varieties which are

known to be good croppers, size in culinary, and flavour and colour in dessert varieties, being the more essential points in market Apples. Here, where the soil is of a light, gravelly nature, Apples do well; and as we usually have long dry and sunny autumns, the trees thoroughly mature their fruits and shoots. The above remarks apply not only to Apples, but to other kinds of hardy fruit. Pears and stone-fruit do not, as a rule, reach a high standard of perfection, unless the trees are afforded the protection of a wall; but Strawberries, Gooseberries and Currants, Raspberries, &c., are successfully cultivated. In time, some cultivators, more enterprising than their fellows, will probably extend their operations, and by example, encourage their more dilatory brethren, and thus give a much-needed impetus to the fruit-growing industry of North Wales. *C. S., Ynys-y-Maengwyn, Towyn, N. Wales.*

DEFECTIVE POTATO CROPS.—I was much interested in reading the report in the *Gardeners' Chronicle* of the scientific committee of the Royal Horticultural Society on the subject of defective Potato crops. I purchased this year Sutton's Al, Reliance, and Supreme. They were started in boxes, and they produced strong shoots. I planted them out on April 16, and they came very irregularly. As the season advanced some of them grew very strongly and made thick bold stems and fine healthy foliage, but tubers each side of them did not throw up stems any larger than a straw, and were smothered with green-fly. Eventually the majority died away altogether, but those that were so strong are now looking wonderfully well. Another variety that has behaved the same is Duke of York. Two or three plants in a row, and in one case the whole row were so affected, and are still smothered with green-fly. Duke of York recovered itself, but did not produce a crop worth mentioning, and the tubers were very much deeper in colour. I also noticed that the "sets" that were planted deeply were not affected. I plant early Potatoes with a large dibber, and the holes were not made at an even depth, and possibly the late frosts destroyed the growth so much of any shallowly planted that the tubers were weakened. I stated in the *Gardeners' Chronicle* a few weeks ago the effects of the very sharp frosts. Sutton's Ring-leader and Sharpe's Victor were cut back to the starting point, the sets started again and threw abundance of shoots, and the border looked as if it had been planted with small plants. I did not destroy them. The old shoots were worthless, but from each fresh shoot were produced one or two Potatoes, of which I am sending a sample to the Editor. Potato crop this year is very deceptive; some roots producing a quantity of tubers, and others a very few. In one case I had only one tuber. Sandpit Seedling was the variety, but I should think it weighed ½ lb. This is the first year I have tried it. *H. Kempshall, Lamport Hall Gardens, Northampton.*

GREEN PEAS.—My attention has been called to a letter with this heading in your issue of June 30. The writer is evidently unacquainted with our London markets, or he would not say that Chelsea Gem, Wm. Hurst, Telephone, Veitch's, and Yorkshire Hero, and other first-class Peas, are not grown in bulk. The facts are just the opposite. The sorts named, and such others as Gradus, Prince of Wales, Duke of Albany, Exonian, Duke of York, Autocrat, and other wrinkled sorts, are largely grown in the home counties, some growers sowing 40 or 50 bushels, or even more of some of them; whilst Eclipse, and other round white and blue-seeded sorts are now hardly grown at all, except for very early sowing, and in much smaller quantities every year. *C.*

INCARVILLEA DELAVAYI.—I am glad to see this plant is now so much appreciated. I have this year flowered the specimen figured in the *Gardeners' Chronicle*, vol. xxvi., No. 659, and about sixty of its seedlings, which came very true in every way. Beds of these have a fine effect. The parent plant was in winter covered with a cap glass as heretofore, and about half-a-dozen seedlings had glass placed 1 foot above them, but quite open at the sides. The remainder of the plants were entirely unprotected, and had various exposures, and they are more robust, and have bloomed better than those which had the trifling protection mentioned. I have many unflowered seedlings as well, and I

cannot discover any plant having failed to reappear this spring. *Wm. T. Hindmarsh, Alnbank, Alnwick.*

PRIMULA FLORIBUNDA.—No one having a frame or greenhouse from which frost can be excluded should be without this free-flowering plant, which begins to flower early in the winter, and continues until late in the spring. I consider it to be superior to *P. obconica*, as the yellow colour makes it an excellent subject for mixing with other plants in the conservatory. A plant growing in a 5-inch pot will produce twelve to eighteen flower-spikes at one time. Another advantage it has over *P. obconica* is in its not causing skin irritation. The seeds are very minute, and require great care in sowing them. *X.*

CAMPANULA ABIETINA.—In reference to Mr. Wolley Dod's note, I have had this plant for many years growing in a border facing the east, in poor soil exhausted by roots of climbers on a wall, so that it scarcely has a fair chance. I have never taken any trouble with it, but it flowers every year, and though it does not increase in size rapidly, it does not decrease. *Wm. T. Hindmarsh, Alnbank, Alnwick.*

—Mr. C. Wolley Dod in his reference on p. 24 in your last issue, echoes my sentiments in relation to this comparatively recent introduction. It has grown with me at Forest Hill on heavy loam with clay subsoil, as one among several dozen varieties of *Campanula*. It resulted in the formation of rather strong breadths of cushions without any flowers whatever during several years when none of the other varieties ever failed to flower. My removal to this part in the spring has somewhat prejudiced observation. Perhaps others have been successful, and their advice would be welcome. *H. H. Raschen, Sidcup, Kent.*

HAILSTORMS.—A storm of unusual severity, accompanied by hail, passed over Bury St. Edmund's on Monday, July 16. Hailstones as large as Hazel-nuts fell, and doing considerable damage to crops. The Chrysanthemums have suffered very much, and many of the plants are ruined. Broccoli, Brussel Sprouts, &c., are riddled with holes; Runner Beans have lost most of their leads, and many of the blooms were found quite 4 feet away from the plants. I fear the Apple crop which was so promising is completely ruined. *H. Coster, Ickworth Gardens.*

—We had in this part a very heavy storm accompanied by hail on the 11th ult. The damage done by the hail was such as I have never before witnessed. We had 510 panes of glass broken, the sizes of which run from 18 by 12 inches; and much damage was done to fruit. *A. B., Brixworth, Northampton.*

SPORTS.

OUR illustration (fig. 10, p. 57) shows a shoot of the Purple Nut from which, as by reversion, a green shoot has proceeded. It is probable that the Purple Nut was in the first instance grafted on the common green species.

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 17.—An ordinary meeting of the Committees was held in the Drill Hall, Buckingham Gate, Westminster, on Tuesday last, when a very pretty show was made, in which hardy flowers were again richly represented.

An exhibition of paintings of valuable Orchids that have from time to time been given awards by the ORCHID COMMITTEE, attracted considerable attention. Though there were not many Orchids shown on the occasion under notice, several of them were very choice varieties, and the Committee recommended the awards of two First-class Certificates, four Awards of Merit, and four Botanical Certificates.

The FLORAL COMMITTEE recommended Awards of Merit in ten instances, three of which were to Nymphaeas, and four to Carnations. The others included a Rose, a Delphinium, and a variety of *Campanula carpatia*.

No Awards to novelties were recommended by the FRUIT and VEGETABLE COMMITTEE.

In the afternoon a LECTURE upon "Lilies" was given by Mr. WALLACE.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. S. A. de Graaf, Geo. Nicholson, H. B. May, R. Dean, J. H. Fitt, W. Howe, J. Jennings, J. F. McLeod, C. R. Fielder, H. Selfe-Leonard, J. W. Barr, G. Reuthe, George Gordon, Chas. E. Pearson, E. H. Jenkins, Charles E. Shea, Geo. Paul, Chas. T. Drury, and J. Fraser.

Two very fine exhibits were made by Lord ALDENHAM, Aldenham House, Elstree, Herts (gr., Mr. E. Beckett). The first of these was a large group of *Codiaeums*, composed of excellently-cultivated plants of moderate size. Some of the varieties we noticed were *Picturatum*, *Warreni*, *Reidi*, *Etna*, *Aighburthense*, *Heathi elegans*, &c.

The other exhibit was one of hardy flowers of herbaceous plants. It was a very large group, and represented by magnificent specimens many of the best hardy plants now in flower. Some of those we noticed were *Astrantia rosea*, *Inula hirta*, *Lychnis chalcedonica*, *Scabiosa caucasica*, *Eryngium alpinum*, *Heliopsis Picheiriana*, *Gypsophila paniculata*, *Lathyrus latifolius*, *Phloxes*, *Lilies*, *Gladiolus* *The Bride*, which was grand, and many others (Silver-gilt Flora Medal).

Tuberous-rooted *Begonias* were grandly shown as cut flowers by Mr. B. R. DAVIS, Yeovil Nurseries, Somerset.

Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, showed a large collection of garden and decorative *Roses*, as well as exhibition varieties. The new tea-scented *Corallina* and *Merveille de Lyon* were capital, also the new *Tennyson* recently figured in the *Gardeners' Chronicle*; *Marquise de Salisbury* was also very good. A new Tea *Rose Boadicea*, with yellow petals, having rose-coloured margins, is very promising. The blooms are large in size, and the variety will be sure to be a good one for exhibition (Silver-gilt Banksian Medal).

Mr. H. B. MAY, Dyson's Road Nurseries, Upper Edmonton, showed a group of stove and greenhouse foliage plants, in which a selection of *Codiaeums* was a feature. *Cissus discolor*, *Acalyphas Macfeeana* and *musica*, *Tradescantia regina*, *Phrynium variegatum*, *Begonias* *Arthur Mallet* and *Naomi Mallet*, *Campanula isophylla*, and *C. i. Mayi*, figured in *Gardeners' Chronicle*, August 12, 1899, p. 127. Also some choice Ferns, and all the plants were shown in capital condition (Silver-gilt Banksian Medal).

Carnation Mrs. Porter had scarlet-erimson flowers, and would make a good variety for the border. It was shown by A. W. PORTER, Esq., Prospect Villa, Holly Road, Waltham Cross.

J. KEY ALLEN, Esq., St. Aubins, Bitterne Park, Southampton, exhibited fourteen varieties of Sweet Peas in bunches (Bronze Banksian Medal).

Mr. A. PERRY, Hardy Plant Farm, Winchmore Hill, London, N., exhibited an imposing collection of hardy flowers, in which a large number of the best species were well represented (Silver Banksian Medal).

Messrs. WALLACE & CO., Kilmfield Gardens, Colchester, exhibited a group of flowers of hardy and bulbous species, in which there were some very interesting Lilies. *L. Humboldtii* was particularly well shown, in very large sprays of fine flowers; *L. Thunbergianum*, in many varieties; *L. longiflorum*, &c. *L. auratum* *Crimson Queen* is a most effective variety, the petals being marked with a broad, vivid band of crimson; *L. encolor*, a slender-growing Lily, about 1 foot high, erect, and having scarlet flowers; also a variety of this named *Coridon*, the flowers of which are orange-coloured, and are produced rather more freely than in the type (Silver Banksian Medal).

Messrs. JAS. VEITCH & SON, Royal Exotic Nurseries, Chelsea, showed a number of *Marliac's* Lilies in tubs, including *N. Marliacea rosea*, which was given an Award of Merit, and *N. alba*, which was shown grandly.

Mr. J. DOUGLAS, Edenside Nurseries, Great Bookham, Surrey, made an exhibit of a number of new varieties of border Carnations; three of these are described under "Awards," and some of the others were very beautiful.

Awards

Campanula campylocheilos.—A variety of this well known *Campanula* having flowers 3 inches across, which open almost perfectly flat. The plants shown were exceptionally free flowered, and it is evidently a vigorous grower. From Mr. PRITCHARD, Christchurch Nurseries, Hampshire (Award of Merit).

Carnation Lelandae.—A reddish-buff-coloured flower of good form, and judging from the foliage shown, it is a good grower. From Mr. JAS. DOUGLAS, The Nurseries, Gt. Bookham (Award of Merit).

Carnation Bomba.—The flowers are very large in size, and clear rose in colour. The petals are extra good. From Mr. JAS. DOUGLAS (Award of Merit).

Carnation Major Herbert.—The plants shown were about 3 feet high, and had yellow flowers of good size and form, and a non-splitting calyx. From Lord SUTCLIFF, Gaunt Park, Norwich, gr., Mr. Allan (Award of Merit).

Carnation Pendellii Ralli.—Flowers clear yellow; a capital border variety. From Mr. JAMES DOUGLAS (Award of Merit).

Delphinium Blue Butterfly.—An annual *Delphinium* growing a foot high, as shown. It has narrow, lanceolate leaves, and makes a very compact little plant. Flowers intense blue. From JAMES CARTER & CO., High Holborn (Award of Merit).

Nymphaea Leydekeri fulgens.—A dark red or crimson variety, shown by Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea (Award of Merit).

Nymphaea Marliacea rosea.—A variety of *Marliac's* Lily, with rose-tinted petals, and deep orange-coloured stamens. From LEOPOLD DE ROTHSCHILD, Esq. (gr., Mr. J. Hudson) (Award of Merit).

Nymphaea stellata pulcherrima.—A variety of the blue flowered *N. stellata*, said to be more hardy than the type. It is a pretty shade of blue colour, the stamens as well; the base of the centre of the flower yellow. The exterior of the sepals, instead of being green, is much marked with purple. From LEOPOLD DE ROTHSCHILD, Esq. (Award of Merit).

Rose Souvenir de C. Guillot.—A new and very pretty Tea-scented variety, shown by Messrs. W. PAUL & SON, Waltham Cross. The flowers are rose and salmon coloured, the combinations of these tints varying much in the flowers (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, H. J. Chapman, W. H. Young, H. A. Tracy, W. H. White, E. Hill, T. W. Bond, H. T. Pitt, E. Ashworth, J. Douglas, and J. T. Gabriel.

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), staged a group of remarkably interesting species, the most distinct of which are enumerated in the list of awards, and for which a Silver Banksian Medal was awarded. In addition to the certificated plants were *Oncidium* \times *caloglossum*, a supposed natural hybrid of *O. Marshallianum*, and *O. Forbesii*; the bright yellow *O. Jamesoni*; the elegant *Epidendrum gracile*; *Geodorum pictum*, *Calanthe-like* in habit, but with the upper part of the stout inflorescences turned downward, notwithstanding which the flowers appear in the ordinary position, with the labellum at the bottom; *Cypripedium* \times *Rothschildo-purpurens*, *C. x Rothschildotumsonum*, and *C. x levigato-purpureum*; and a pretty little reddish hybrid *Masdevallia*, obtained between *M. Wagneriana* and *M. Veitchiana*.

H. F. SIMONDS, Esq., Woodthorpe, Beckenham (gr., Mr. Geo. F. Day), was awarded a Silver Flora Medal for a very fine group, made up of good forms of *Odontoglossum crispum*, *Cattleya Mendeli*, *Miltonia vexillaria*, *Oncidium sarcodes*, *Laelia tenebrosa*, *Epidendrum vitellinum*, *Dendrobium*, *Cypripedium*, &c. A remarkable feature in the group was that it contained two fine plants of the handsome Madagascar *Grassmangis Elliotti*, with very strong spikes of flowers.

Messrs. F. SANDER & CO., St. Albans, had an effective group of their fine type of *Dendrobium Phalaenopsis Schroderianum*, around which were arranged *Cypripedium* \times *Lady Maple*, *C. x Lord Derby*, *C. x Kilmadiliana*, *C. x A. de Lairese*, and *C. x Haynald-Hooker*, a singular hybrid.

The greater part of the Society's collection of paintings of



FIG. 10.—PURPLE AND GREEN HAZEL. (SEE P. 56.)

There were 210 flowers, and almost all of them were double varieties. Some of the more noticeable of these fine flowers were—Mrs. Stothert, pale lemon; Florence Nightingale white; Orion, scarlet; Mrs. Nichols, pink; Hon. Miss Winn, very deep flower, rich pink colour; Mr. H. J. Jones, salmon-scarlet, with whitish centre; Madame La Baronne de St. Didier, pale yellow; Mrs. Richmond, light pink, with deeper-coloured margins; Orontes, bright scarlet; Regina Victoria, crimson, a flower with several centres of development (Silver Banksian Medal).

Carnations in pots were shown by Messrs. W. CUTBUSH & SON, Highgate Nurseries, London, N., in a style of group this firm is becoming remarkable for. The varieties were chiefly those of the *Souvenir de la Malmaison* type, and included *Nautilus*, white, or nearly white; *Gemma*, pink; *King Oscar*, scarlet; *Thora*, pale pink; Mrs. Martin R. Smith, rich pink, very large; Mrs. Trelawney, scarlet, &c. Excellent border varieties shown were *Minerva*, pure white; *Lady Mimi*, salmon pink; and the new scarlet-flowered *Herbert J. Cutbush* (Silver Banksian Medal).

Messrs. PAUL & SONS, The Old Nurseries, Cheshunt, made a considerable exhibit of cut *Roses* and *Phloxes*. Teas and hybrid Teas were shown in numerous varieties, and they were arranged in vases. There were nearly a score varieties of *Phloxes*, from pure white to deep purple and bright scarlet (Silver Banksian Medal).

Mr. W. RUMSEY, Joyning's Nurseries, Waltham Cross, exhibited a group of cut *Roses*, including exhibition varieties and others, more particularly useful for decoration. The flowers were rather small and thin, owing probably to having been hurried by the great heat (Bronze Banksian Medal).

Messrs. JONES & SON, Shrewsbury, made an exhibit of thirty-six varieties of Sweet Peas in vases, and were awarded a Silver Banksian Medal. The flowers were of good size, and brilliant colours.

Messrs. DOBBIE & CO., Rothesay, N.B., and Orpington Kent, made a gay exhibit of *Violas* and Sweet Peas. *Violas* exhibited great variety of colour, and the flowers were of good size and fresh appearance. Some of the Sweet Peas were particularly attractive, as *Countess of Powis*, rosy pink; *Lady G. Hamilton*, lavender-blue; *Blanche Burpee*, white; *Eliza Eckford*, pink and white; *Black Knight*, Sunproof Salopian, crimson, &c. (Silver Banksian Medal).

Mr. THOS. S. WARE, LTD., Feltham Nurseries, Middlesex, exhibited cut flowers of Carnations, and many hardy species; also plants in pots of some pretty large-flowering *Pentstemons*.

Messrs. I. HOUSE & SON, Westbury-on-Trym, Bristol, exhibited varieties of *Chrysanthemum maximum*, and *C. latifolium*.

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., exhibited a nice group of cut flowers, including varieties of *Marliac's* *Nymphaeas*, and a representative collection of hardy herbaceous and bulbous species (Silver Banksian Medal).

Helenium pumilum magnificum is a most beautiful hardy flowering plant, and has rich gold-coloured flowers 4 inches across. Sir TREVOR LAWRENCE, Burford, Dorking (gr., Mr. Bain), exhibited cut blooms of this, and they were admired greatly.

Mr. M. PRITCHARD, Christchurch Nurseries, Hants, exhibited an erect-flowering variety of *Cimicifuga americana*, *Centaurea ruthenica*, *Heliopsis scabra major*, *Lilium Browni*, and a very fine plant of *Astille* *Silver Sheaf*.

Orchids to which Awards of Merit or First-class Certificates have been given, and which now amount to over 400 pictures, forming a valuable and useful series of varieties of all the great genera, and also some fine species and varieties of rare Orchids of botanical interest were set up for inspection, and at once disclosed the useful purpose for which they were intended. General approval of the work of the Society's artist, Miss ROBERTS, 72, Loughborough Road, Brixton, S.W., and a majority of the Orchid Committee decided to recommend the Council to award to Miss ROBERTS a Silver Medal as a recognition of her good work.

It was announced that a full display of the pictures, including those for which room could not be found, should be made at the next meeting, July 31.

Awards.

FIRST-CLASS CERTIFICATES.

Phaius × *Onkwoodensis* (× *Cooksoni* × *Humboldtii*), from NORMAN C. COOKSON, Esq., Oakwood, Wylam, Northumberland (gr. Mr. Wm. Murray). A new type of hybrid *Phaius*, and one of the showiest which has yet appeared. The habit of the plant and form of the flowers are near to *P. Humboldtii*, but larger in all the parts and unique in colour. The broad sepals and petals are tinged with rose-pink on the face, and rose-purple on the reverse side, the midribs or keels at the back being white. The labellum is flatly displayed as in *P. Humboldtii*, and broader across the side lobes than in all other *Phaius*; white at the base, and bearing a stout yellow callus in the centre, the remainder, and greater part of the lip being of a bright rose-claret, the side lobes having a glowing yellow line towards the inner part. Column pale yellow.

Marillaria scutellata, Lehmann, from Sir TREVOR LAWRENCE, Bart., Burford (gr. Mr. W. H. White). A most extraordinary species with long riband-like segments of quaint arrangement and singular colour. The lateral sepals are extended and arched, and then curved down; the petals narrower and curved forward and downward. The flower is white in the area round the column, with a few purple spots, the remainder being yellow, with conspicuous purplish-brown markings, and a purple tint on the tips of the sepals—a very remarkable flower. Habit of growth resembling *M. grandiflora*.

AWARD OF MERIT.

Madevillia deorata, Lehmann, from F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin.—A very singular species, discovered by Consul F. C. Lehmann, and stated by him to always grow head downwards. The leaves on Mr. MOORE's plant are a foot or so in length, but the native specimens are often longer. The flowers equal in size the larger species of the *Coriacea* section; the perianth segments being long and tapering. The flowers are honey-yellow, heavily blotched at the backs with purple, which colour shows through on the face; the exterior base of the flower purple; tails long and extended.

Angreum filicinum.—From Sir TREVOR LAWRENCE, Bart. (gr. Mr. W. H. White). A singular and pretty species, with fleshy-channelled leaves and single snow-white flowers, with long greenish spurs.

Cypripedium × *Rothschildi* - *Laurenceanum*.—A handsome hybrid, with some resemblance to *C. × Lord Derby*, but with the ivory-white purple-spotted petals horizontally extended. The large upper sepal was striped with purple, and the face of the lip tinged with dark rose colour.

Oncotoglossum coronarium (Glasnevin variety).—From F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin. An almost wholly yellow-coloured form, the usual brown markings being nearly suppressed.

AWARD OF MERIT.

Tainia speciosa.—From Sir TREVOR LAWRENCE, Bart., a pretty Malayan species, with upright spikes of whitish flowers with purple lines.

Masdevallia maculata, from Sir TREVOR LAWRENCE, Bart. —Perianth narrowly arranged, yellow with purple markings.

Cirrhopetalum chinense, from Sir TREVOR LAWRENCE, Bart. —Equal in size to *C. picturatum*, flowers yellowish-white, freckled with dark rose colour.

Sarcanthus peninsularis, from Sir TREVOR LAWRENCE, Bart. —A graceful species allied to *S. pugioniformis*, but much more slender and smaller in girth, the pyramidal plant about a foot high, bore a dozen drooping spikes of flowers.

CULTURAL COMMENDATION.

Silver Banksian Medal to Mr. Powell, gr. to Col. W. E. BRYMER, Islington House, Dorchester, for a grand specimen of *Coleogyne Sanderiana*, with a large number of spikes of its white flowers of good size.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman; and Messrs. W. Wilks, Henry Esling, Jos. Cheal, A. F. Barron, Geo. Kelf, S. Mortimer, G. T. Miles, W. J. Empson, Geo. Wythes, F. Q. Lane, G. Norman, E. Beckett, and H. Balderson.

MESSRS. CHEAL & SONS, nurserymen, Lowfield, Crawley, Sussex, made a striking exhibit of standard umbrella-shaped Gooseberry-bushes, and single and double cordons; also *La Fertile Red Currants* as standards. The methods of training Gooseberries as umbrellas is very old, but it fell into abeyance, although not devoid of merit; the fruit being kept clean, and easily gathered, besides being cheaply protected by hexagon netting from wasps and birds. The plants shown were very abundantly fruited, the summer pruning necessary with these methods of training tending greatly to the formation of fruit-spurs.

Messrs. J. CHARLTON, High Church, Morpeth, showed a three-year-old Gooseberry-bush of the variety *Victoria*, evidently a very heavy cropper.

H. E. FRY, Esq., Bickley Hall, Kent, showed a red-fleshed Melon, Bickley Hall Hero, of no particular merit.

W. A. CLARKE, Esq., Inglewood Gardens, Hungerford, Berks, showed a boxful of Tomato-fruits, of a cross obtained from Royal Sovereign. It is an orange-coloured fruit, smooth, and large.

Messrs. CROSS & SON, Daffodil Nursery, Wisbech, showed early Apple (Codlin) *Victoria*, fit for culinary use at this date. The fruits were of medium size and of a green colour.

Rev. W. WILKS, Shirley, near Croydon (secretary of the society), showed fruit of the Loganberry, an acid fruit, fit for jam-making and other culinary uses. The fruits are longish-oval, and of a dull clouded purple tinge. It is said to be a cross between a Raspberry and one of the American Blackberries.

Messrs. J. VEITCH & SONS showed Strawberry Lord Kitchener—British Queen × Waterloo, a fine bright-coloured fruit of fair flavour, said to be excellent as a preserving fruit, and not despicable as a dessert fruit. It is a good doer and a great cropper. Raspberry Yellow Superlative, Superlative (red) and Autumn Yellow, the fruit of a yellow tinge, with a faint trace of red. A good cropper.

Mr. L. PELLY, Rusper, Sussex, exhibited twelve bunches of Black Hamburg Grapes, weighing from 2½ to 3½ lb. per bunch, excellent in every respect, and having the hammered appearance so indicative of high cultivation.

R. J. GIFFEN READ, Esq., Cadlyric House, Ealing, showed a plateful of the Old Stone Pippin of 1899 in a fair state of preservation.

Mr. G. Wythes, gr. to the Duke of Northumberland, Syon House, Brentford, showed a seedling, yellow-fleshed Melon of good flavour, and having a thin, slightly netted rind.

LORD SUFFIELD, Gunton Park, Norwich (gr. Mr. Allan), showed three dishes of Strawberry Lady Suffield, a dark crimson-glazed fruit, with prominent seeds. The fruit is wedge-shaped or conical, but destitute of flavour.

The Marquis of SALISBURY, Hatfield House (gr. Mr. G. Norman), showed some sixteen fruits of Brown Turkey Figs of a large size, and just fit for eating.

Messrs. W. W. JOHNSON & SON, LTD., seed merchants, Boston, Lincolnshire, exhibited a very extensive collection of culinary Peas, in 150 dishes, distinct varieties, consisting of the best of those sent out by various raisers. It was a very fine exhibit of Peas at their best, only a few samples being too old.

Messrs. JAS. CARTER & CO., High Holborn, made a very fine show of Lettuces, chiefly of Cabbage varieties. Very superior among these varieties were Perpetual, Hanson's, Large Yellow, Victoria, Large Summer White, Malta Drum-head, All-the-Year-Round, Round-leaved, Buttercup, Perpetual, Carter's Speckled Long Stander, Carter's Perpetual, a new, much crinkled variety, with a large solid heart; and New York. The Cos varieties were Jumbo, Neapolitan, Bath White-seeded, Baldwin, Giant White, Paris Green, Paris White, Hardy Green, and Hardy White Winter.

Awards.

Silver-gilt Knightian Medal to Messrs. W. W. JOHNSON & SON, Boston, Lincolnshire, for 150 dishes of Peas.

Silver Knightian Medal to Mr. L. PELLY, The Vineries, Rusper, for twelve bunches of Black Hamburg Grapes.

Silver Knightian Medal to Messrs. J. CHEAL & SONS, Crawley, for standard and cordon Gooseberries and Currants.

Silver Banksian Medal to Messrs. J. CARTER & CO., High Holborn, for forty varieties of Lettuces.

Silver Banksian Medal to the Marquis of SALISBURY, for Brown Turkey Figs.

Lecture on Lilies.

In the afternoon a lecture was given by Mr. R. WALLACE, of Colchester, upon Lilies, and he had gone into his subject but very little before emphasising their hardy character. It was not generally known, said Mr. Wallace, that such handsome species as *L. giganteum*, *L. Browni*, *L. Henryi*, and others, were perfectly hardy in this country, but such was the case, and they were more liable to be injured by late spring frosts than by a severe winter. Mr. Baker's system of arranging the species into groups, which was published in the *Gardeners' Chronicle*, in 1875, was described, and tribute given to the value of Mr. Baker's work.

Most Lilies, said Mr. Wallace, succeed best when given partial shade, and planted where they will obtain a cool and moist atmosphere. They should not be planted where they will be subjected to cold, searching winds, nor directly under trees, or in cold, wet, or water-logged soil.

Useful information was given in respect to the kind of soil required by the different species, and the best season at which to lift the bulbs. Reference was made to the cultivation of Lilies in pots, and to the forcing of Lilies; also to the practice of growing Lilies planted out in unheated glass-houses, as adopted by Mr. G. F. Wilson, of Weybridge.

Mr. Wallace remarked that little has been done in the matter of hybridising Lilies; there are several good hybrids, but perhaps not any of them are more beautiful than their parents. The species do not easily cross with each other; but Mr. Luther Burbank, of America, is said to have been employed for some time past in making experiments with them, and possibly he may have obtained some valuable results.

Some interesting particulars were given in respect to the Lily trade in Europe, Japan, and America, which has grown into an industry of considerable magnitude.

WOKING HORTICULTURAL.

JULY 10.—This newly founded Society, which embraces the districts of Woking, Horsell, and Woodham, held its summer exhibition in the grounds of Woodham Hall, kindly lent by W. N. STEVENS, Esq., the President. Three tents were required to hold the exhibits, which were numerous, and of a satisfactory character. The secretarial duties were ably carried out by Mr. ROBERTSON, who has had considerable experience in such matters. Plants were largely shown, and their quality was above reproach.

For four stove and greenhouse specimens, in flower, Mr. T. OSMAN, gr. to J. BAKER, Esq., Ottershaw Park, Chertsey, had the finest exhibits, the plants being healthy and well flowered. The same exhibitor was the winner for the best six specimen foliage plants, the *Codiaeums* and *Palms* being extra good. Mr. TOMLIN, gr. to Mrs. GOLDINGHAM, Anningsley Park, Brox, was a good 2nd.

Palms were numerous arranged down the centre of one of the tents, and added to the display considerably. For two *Palms* Mr. OSMAN was placed 1st for specimens of *Kentia Fosteriana* and *Areca lutescens*, in faultless condition; Mr. TOMLIN was 2nd. Exotic Ferns and *Caladiums* were also well shown by Mr. OSMAN in their respective classes.

Miscellaneous plants, arranged for effect, made a goodly display. Mr. A. SEABROOK, gr. to P. N. STEVENS, Esq., Woodham Hall, secured the leading award, with a nicely-balanced arrangement of suitable plants, *Orchids*, *Gloxinias*, *Palms*, *Codiaeums*, and Ferns. Mr. A. SUTTON, gr. to PHILIP WATERLOW, Esq., Silverlands, Chertsey, was a good 2nd in this competition.

Cut flowers were plentiful, and formed a big display of themselves. In the class for twenty-four Roses, distinct varieties, the exhibits, which would have taken the 1st and 2nd prizes were disqualified by reason of duplicate blooms being shown in each. The 1st prize fell in consequence to Mr. H. W. SILLEM, The Pines, Horsell, for a stand of small but well-coloured blooms. This exhibitor also secured the leading award for twelve blooms, distinct varieties, with a stand of perfectly formed examples. Mr. J. Creswell, gr. to Miss KENNEDY, Aldershot Park, was a good 2nd.

Mr. SEABROOK had the most meritorious stand of stove and greenhouse blooms in twelve varieties—a good exhibit; Mr. OSMAN was 1st for twelve bunches of hardy flowers, staging a fresh, bright set; Mr. TOMLIN securing the 2nd place in a strong competition.

Sweet Peas were a special feature, so numerous and good were they. In the class for twelve bunches, Mr. W. SUTTON led with an effectively-arranged set of good blossoms; Mr. TOMLIN securing a like award in a special-prize class.

Mrs. SEABROOK in another class was placed 1st, with Sweet Peas nicely blended together; Mrs. SUTTON was 2nd.

Fruit and Vegetables were well represented. Mr. OSMAN secured the leading award for a collection of six dishes and for two bunches of black Grapes, with really fine examples of Black Hamburg.

Mr. BASILE, gr. to the Rev. PRESIDENT, took all of the leading awards for collections of vegetables, with very fine productions.

The "not for competition" exhibits contributed to the attractiveness of the show.

Mr. J. DOUGLAS, Great Bookham, had a charming collection of Carnations and Pinks, including the new yellow *Cecilia*. Messrs. G. JACKMAN & SONS, Woking, had Roses and hardy flowers. Mr. W. SPOONER, Woking, a like exhibit; while Messrs. FLETCHER BROS. contributed Roses in quantity, including many newer varieties.

HARROW HORTICULTURAL.

JULY 10.—Favoured by fine weather, and enlivened by the performances of the Highland Band of the Gordon Boys' Orphanage, Dover, and of the 5th Middlesex R.V.C., the show of the above society was held in the grounds of H. W. KIRBY, Esq., The Crofts, Greenhill, and proved a great success, thanks chiefly to the efforts of Lewis S. Pawle, Esq., the Hon. Sec., and Dr. Williams, who take a great interest in the society.

Roses have been steadily gaining favour around Harrow, and the open classes brought together a fine set of exhibits.

For thirty-six Roses, Messrs. FRANK CANT & CO., Colchester, were 1st; and Mr. GEO. PRINCE, Oxford, 2nd; Messrs. PAUL & SON, Cheshunt, and Messrs. D. PRIOR & SONS, Colchester, also showing well.

For twelve Roses, Teas or Noisettes, Mr. G. PRINCE was 1st, Mr. B. R. CANT was 2nd, and Messrs. F. CANT & CO. 3rd. In the class for twelve bunches of garden Roses, Mr. CHAS. TURNER, Slough, secured the 1st prize with a splendid exhibit. In Mr. CHAS. TURNER's collection, the best Rose in the show—a grand flower of Mrs. John Laing—was found, securing for the exhibitor the National Rose Society's Silver-gilt Medal given by Dr. Williams.

In the Amateurs' Open Class, the 1st prize for twenty-four Roses was taken by Mr. C. J. Salter, gr. to Mrs. HAYWOOD, Reigate, whose stand also contained the flower which secured the National Rose Society's Medal, given by Mr. R. West, and which in this case also was a fine bloom of Mrs. John Laing; Mr. E. MAWLEY, Berkhamsted, 2nd; Mr. COOK, North Finchley, 3rd.

In the members classes, Mr. J. R. CATER took 1st both for six and for eighteen Roses. Mr. L. S. PAWLE was 1st in Class 7; and also secured the National Rose Society's Medal for the best Rose in the members classes with a fine *La France*. In the amateur members class for six Rose, Dr. WILLIAMS was 1st.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period July 8 to July 14, 1900. Height above sea-level 24 feet.

1900.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			
		At 9 A.M.		DAY.	NIGHT.	RAINFALL.	At 1-foot deep.		
		Dry Bulb.	Wet Bulb.				At 1-foot deep.	At 2-feet deep.	At 4-feet deep.
JULY 8 TO JULY 14.									LOWEST TEMPERATURE ON GRASS.
SUN. 8	N.N.W.	58°	55°	65°	42°	...	61°	60°	56°
MON. 9	W.N.W.	63°	45°	72°	55°	...	62°	60°	57°
TUES. 10	W.N.W.	66°	57°	82°	71°	...	63°	60°	57°
WED. 11	S.S.W.	71°	64°	93°	91°	...	65°	96°	257°
THU. 12	S.S.E.	73°	84°	97°	80°	...	63°	262°	257°
FRI. 13	E.S.E.	71°	64°	82°	54°	...	67°	96°	85°
SAT. 14	S.S.W.	64°	90°	97°	57°	...	67°	96°	257°
MEANS...		67°	260°	577°	153°	...	65°	361°	57°

Remarks.—The weather has been bright and hot all the week. No rain has fallen since the 6th inst.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending July 14, is furnished from the Meteorological Office:—

"The weather dull and unsettled in the west and north of our islands, with rather heavy falls of rain at times in some parts of Scotland. Fair and cool elsewhere at first, but subsequently setting in exceedingly bright and hot. Thunderstorms occurred in many parts of England towards the close of the period, mostly over the northern districts.

"The temperature was 4° above the average over the Midland Counties, but only 1° in Ireland, S., England, S.W., and Scotland, W. The highest of the maxima occurred on the 11th over Ireland, and on the 11th or 12th over England and Scotland; they ranged from 90° in England, E., 89° in the Midland Counties, 86° in England, S., and S.W., and 83° in England, N.W., to 74° in Scotland, W., and in Ireland, S. The lowest of the minima were registered at the beginning of the week, and varied from 36° in England, S.W., to 38° in Scotland, N. and England, N.W., and 39° in the Midland Counties.

"The rainfall was above the average over the northern and eastern parts of Scotland, but below it in all other localities. The deficit was rather large in England, E.

"The bright sunshine, although in defect over Scotland, was largely in excess of anything recorded for many weeks past elsewhere; and in nearly all parts of our islands it was considerably above the mean. The percentage of the possible duration ranged from 75 in the Channel Islands, 68 in England, S.W., 65 in England, S., and 64 in England, E., to 19 in Scotland, N., and 22 in Scotland, W."

MARKETS.

COVENT GARDEN, JULY 19.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day but often several times in one day. Ed.]

OUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arums	1 6-2 6
Asparagus "Fern," bunch	2 0-2 6
Carnations, per doz. blooms	1 0-2 0
Cattleyas, per dozen	9 0-12 0
Eucharis, per dozen	3 0-5 0
Gardenias, per doz. Gladioli, scarlet, per dozen	1 0-2 0
— white, per doz.	3 0-5 0
Lilium Harrisii, per dozen blooms	3 0-5 0
Lilium lancifolium album, doz. blms.	2 0-3 0
Lilium rubrum, doz.	4 0-8 0
Lilium longiflorum, per dozen	2 0-3 0
Lily of Valley, per doz. bunches	6 0-18 0
Maidenhair Fern, per doz. bunches	4 0-8 0
Marguerites, p. doz. bunches	8 0-6 0
Mignonne, dozen bunches	4 0-6 0
Odontoglossum, per dozen	3 0-6 0
Roses, Red, per dozen	1 0-4 0
— Tea, white, per dozen	2 6-4 0
— Safrano, per doz.	2 0-3 0
— Maréchal Niel, per doz.	4 0-8 0
— Catherine Mermet, per dozen	2 0-5 0
Smilax, per bunch	4 0-5 0
Tuberose, per doz. blooms	0 9-1 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Acacias, per dozen	12 0-18 0
Adiantum, p. doz.	5 0-7 0
Arbor-vitæ, var. doz.	6 0-36 0
Aspidistras, p. doz.	13 0-86 0
— specimen, each	5 0-10 0
Crotons, per doz.	18 0-30 0
Cyclamen, per doz.	8 0-10 0
Dracenas, var., per dozen	12 0-30 0
— viridis, per doz.	9 0-18 0
Ericas, var., per doz.	12 0-36 0
Eucynimus, various, per dozen	6 0-10 0
Evergreens, var., per dozen	4 0-18 0
Ferns, in variety, per dozen	4 0-18 0
Ferns, small, per 100	4 0-6 0
Ficus elastica, each	1 6-7 6
Foliage plants, var., each	1 0-5 0
Genistas, per doz.	6 0-9 0
Lily of Valley, each	1 0-3 0
Lycopodiums, doz.	8 0-4 0
Marguerite Daisies, per dozen	8 0-12 0
Myrtles, per dozen	6 0-9 0
Palms, various, ea.	1 0-15 0
— specimen, each	21 0-63 0
Pelargoniums, scarlet, per dozen	8 0-12 0
— Ivyleaf, per doz.	8 0-10 0
Spiræas, per dozen	6 0-12 0

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, Tasmanian (various sorts) cases	10 0-12 0
— English, Juliens, and Keswicks, in sieves	2 0-3 0
Apricots, box	1 0-1 6
— sieve	7 0-8 0
Bananas, bunch	6 0-10 0
Cherries, English, per sieve	4 0-6 6
— Napoleon's, fine, per sieve	13 0-14 0
Currants, blk., sieve	6 0-6 6
— red, sieve	2 6-4 0
— white, in gal.	1 6 —
Figs (New), per doz.	1 0-3 0
— in bks., Spanish	1 6-2 6
Gooseberries, sieves	2 0-3 0
Grapes, Hamburgh, new, per lb.	0 10-1 3
— Alicante	1 0-1 6
— Colmar	1 6-2 0
— Gros Maroc, per lb.	1 6-2 0
— Muscats, A., per lb.	2 6-3 0
Grapes, Muscats, B., per lb.	1 0-1 6
— Belgian, per lb.	0 8-1 0
Lemons, case	10 0-15 0
Melons, each	1 0-2 6
— Foreign rocks	2 0-3 0
Nectarines, per doz.	8 0-12 0
Class A	2 0-5 0
Class B	2 0-5 0
Oranges, Murcia, p. case	10 0-12 6
Peaches, per dozen	8 0-15 0
Class A	2 0-5 0
Class B	2 0-5 0
French Peas in sieves	7 0 —
Jargonelle	6 0 —
Windsor	2 0-5 0
Pines, each	0 6-4 6
Plums in sieve	2 6 —
— in baskets	3 0-5 0
Raspberries, punnets, doz.	2 0-28 0
— cwt.	3 0-6 0
Strawberries, 12 lb. English, pcks	2 0-2 6
— punnets, doz.	6 0-12 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz.	1 3-2 0
Beans, Scarlet Runners, per lb.	0 3-0 4
— per sieve	6 0 —
— Broad, or home-grown, per bushel	3 0 —
— English Dwarf, per sieve	4 0 —
Beetroot, New, per bunch	5 0 —
— do.	2 0-5 0
Cabbages, tally	0 6-1 0
Carrots, new, per dozen	1 0-2 6
Cauliflowers, per dozen	1 6-3 0
Cress, per dozen punnets	1 6 —
Cucumbers, doz.	2 0-3 0
Endive, new French, per dozen	1 6-2 6
Garlic, new, dozen bunches	2 0 —
Horseradish, English, bundle	1 6 —
— foreign, per bundle	0 10-1 0
Leeks, per dozen bunches	2 0-2 6
Lettuce, English Cabbage, bush.	1 0-1 6
— English Cos, per score	0 6-1 6
Mint, new, p. doz. bunches	2 0 —
Mushrooms, house, per lb.	1 0-1 3
Onions, picklers per sieve	3 6 —
— Egyptian, per cwt.	4 6 —
— Green, dozen	1 6-2 6
Parsley, 12 bunches per sieve	1 0-2 0
Peas	0 9-1 0
— English, per bushel	2 0-4 0
— in bags	3 6-6 6
Potatoes, New, per cwt.	5 0-6 0
— English, new Bedford, cwt.	5 0-6 0
Radishes, dozen	1 6 —
Sals, small, punnets, per dozen	1 3 —
Shallots, new, per dozen bunches	1 6-2 0
— new, per lb.	0 3-0 4
Spinach, Spring, per bushel	2 0-3 0
Tomatoes, English, new, per 12 lb.	3 6-4 6
— Channel Islands, per lb.	0 3-0 4
Turnips, new, per dozen	4 0 —
— in bags	5 0-6 0
Vegetable Marrows, per dozen	1 0-2 0
Watercress, p. doz. bunches	0 4-0 6

REMARKS.—English Apples of the present year's growth have now reached the market. Foreign Plums, and Pears including Jargonelle and Windsor, may be had in large quantities. Gooseberries are now in the early stage of ripeness. Some samples of Cherries are of very fine quality.

POTATOS.

Cherbourg, 6s. per cwt.; Bedfords, 5s. to 6s. per cwt. John Bath, 32 & 34, Wellington Street, Covent Garden.

FRUIT AND VEGETABLES.

GLASGOW: July 18.—The following are the averages of the prices recorded since our last report:—Lisbon Apples, 12s. to 15s. per case; Oporto do., 8s. to 10s. 6d. do.; Bananas, extra, 8s. to 9s. 6d. per bunch; No. 1, 7s. to 8s. do.; No. 2, 5s. to 6s. do.; Oranges, Valencia, ordinary 420's, 18s. to 20s. per case; large and extra large 420's, 22s. to 26s. d.; Lemons, Palermo, cases, 300's, 13s. to 16s.; 360's, 8s. 6d. to 10s.; boxes, 200, 300, and 360, 5s. 6d. to 7s. 6d.; Naples, cases of 300 and 360, 10s. 6d. to 11s. 6d.; Grapes, English, new, 1s. to 2s. per lb.; Mushrooms, 10d. do.; Onions, Egyptian, 3s. 6d. to 4s. 6d. per cwt.; do., Oporto, cases, 4s. 6d. to 5s. per cwt.; do., Maltese, baskets, 2s. 9d. to 3s. 3d. per cwt.; Tomatoes, Valencia, cases, 8s. to 10s.; Potatoes, Maltese, 10s. to 11s. per cwt.; Parsley, 4d. to 6d. per dozen bunches; Lettuce, 4d. to 9d. per dozen; Cucumbers, 1s. 3d. to 2s. 9d. do.; Cauliflowers, 8d. to 1s. 3d. do.; Cabbage, 6d. to 1s. 3d. do.; Peas, 1s. 9d. to 1s. per bushel.

There were a very large number of entries, and the show gave a good representation of the showy flowers of the season, and especially the Sweet Peas, and hardy herbaceous plants, in which Mr. LEWIS S. PAWLE secured the 1st prize for twelve bunches with a splendid collection.

For a group of plants arranged for effect, Mr. J. T. Dinsmore, gr. to T. F. BLACKWELL, Esq., The Cedars, Harrow Weald, was 1st, with a very well-arranged collection of good things, comprising fine plants of Cattleya Gaskelliana, Odontoglossum Halli, Disa racemosa, and other Orchids, set up with Pulms, Crotons, and other foliage and flowering plants.

For six Cannas, A. S. HARGREAVES, Esq. (gr. Mr. Lawrence), was 1st, with a very fine selection of richly-coloured flowers on very compact plants; Dr. WILLIAMS 2nd.

For six Begonias, Dr. WILLIAMS was 1st, and A. S. HARGREAVES, Esq., 2nd.

Groups of plants and collections of flowers were also staged by Messrs. W. CUTBUSH & SONS, Mr. JAS. NAYLOR, Mr. J. LYON, Messrs. Wm. PAUL & SON, Waltham Cross; BARR & SONS, Mr. GEO. CLARK, of Dover; GEO. PAUL & SON, Cheshunt, and others.

The ladies' classes, table decorations, &c., had a tent to themselves, and it was the prettiest and most interesting part of the show; all the exhibits being beyond the average order of merit, and some of them most artistically arranged, and especially the table arranged by Mrs. DEWITT, which took the 1st prize, and which was a clever arrangement of Yellow Broom and scarlet, orange, and yellow Iceland Poppies, set up with light foliage and Maidenhair Fern. Mrs. HORLEY was 2nd, with a pretty arrangement of white Sweet Peas, white Gladioli, Asparagus plumosus, and Gypsophila paniculata; Miss ELLA BROWN and Mrs. L. S. PAWLE being equal 3rd.

The Cottagers' classes were well filled, the entries being far in excess of former years. Vegetables were good throughout. Pot plants in some classes not remarkable, and fruits scarce.

LOUGHBOROUGH AND DISRICT GARDENERS' MUTUAL IMPROVEMENT.

JULY 11.—The members and friends of this Association, about seventy in number, had their first annual excursion on the above date, Welbeck Abbey and Gardens being their destination. Mr. Roberts, the Duke of Portland's courteous head gardener, acted as cicerone, and conducted the members upon a tour through the fruit and plant houses, kitchen-gardens, and pleasure-grounds, &c.; and a most enjoyable day was spent.

DEVON AND EXETER GARDENERS' ASSOCIATION.

ANNUAL SUMMER OUTING.

JULY 11.—This annual excursion of the members and honorary members took place on the above date. The party, numbering between fifty and sixty persons; Lyme Regis being the objective.

The historic old church with its tapestry and fine screen, its ancient lectern and chained Bible and Common Prayer Book, a Jacobean pulpit, and much that was interesting. The Guildhall, suggestive of bygone greatness, a port without ships, and a sea view ranging from Start Point to Portland Bill. Luncheon over, the party proceeded to Pinhay, the seat of Wilton Allhusen, Esq., where Mr. Bloye, the head gardener, met the party and conducted it over the pleasure-grounds and gardens. The estate, about 1400 acres in extent, includes fine woods, an extensive sea-front, and a well-equipped gardening establishment. Some fine pieces of Abies grandis were noted, and a good specimen of Cephalotaxus drupacea. Effects of local landrises showed some picturesque rocks and limestone precipices, and in one part of the woods near the shore was an Ash-tree which had been torn asunder by a subsidence, and left the tree rooted on both sides, and forming the figure A, with sufficient room to allow a tall man to stand within it.

Subsequently Rousdon, the seat of Sir Cuthbert V. Peek, Bart., was visited. Here the party were conducted by Mr. Grover (the scientific assistant of Sir Cuthbert Peek), to the observatory, where through the great telescope the star Arcturus was observed. Arcturus, it may be remembered, was the star visible through the tail or nebula of Donati's comet of 1858. Mr. Bailey, gr., then took charge of the visitors, and showed them the range of glasshouses, 600 feet in length, in which Peaches, Nectarines, and Grapes (Lady Downes and Muscats chiefly), were doing well. The lengthy trellised-walks of Cotonaster and Apple-trees, and nine hedges of Escallonia macrantha and Pyrus japonica, were also noted; and much more besides.

Mr. Hope (Hon. Secretary), and Mr. Mackay (Hon. Treasurer) carried out the arrangements very satisfactorily.

ENQUIRY.

A MODEL GARDEN.—"A young Gardener" would be glad of a few hints from some readers of the *Gardeners' Chronicle* with regard to the making of a model garden, 2 feet square, for exhibition. What species of flowers or flowering plants should he use, and what edgings and evergreens would look well?

LIVERPOOL: July 18. — Wholesale Vegetable Market. — Potatoes, per cwt.: Early Regents, 2s. 9d. to 4s.; Jerseys, 6s.; Kidneys, 5s. to 6s. 6d.; new, 1s. to 1s. 8d. per 21 lb.; Turnips, 6d. to 9d. per 12 bunches; Carrots, do.; Onions, foreign, 3s. 6d. to 4s. per cwt.; Parsley, 4d. to 6d. per dozen bunches; Lettuce, 4d. to 8d. per dozen; Cucumbers, 1s. 3d. to 3s. per dozen; Cauliflowers, 8d. to 1s. 4d. do.; Cabbages, 6d. to 1s. 4d. do.; Peas, 1s. 8d. to 2s. per bushel; Beans, 1s. 2d. to 1s. 4d. per bushel. *St. John's*: Potatoes, 1s. 4d. per peck; do., new, 1d. to 1½d. per lb.; Grapes, English, 1s. 6d. to 3s. per lb.; Pines, English, 6s. to 8s. each; Apples, 8d. to 6d. per lb.; Tomatoes, 2d. to 8d. do.; Currants, red and white, 5d. do.; do., black, 5d. do.; Strawberries, 6d. to 1s. do.; Gooseberries, 3d. per quart; Peas, 10d. to 1s. 4d. per peck; Cherries, 4d. to 8d. per lb.; Cucumbers, 3d. to 4d. each; Mushrooms, 1s. 3d. per lb. *Birkenhead*: Potatoes, new, 1d. per lb.; Peas, 10d. to 1s. 4d. per peck; Cucumbers, 2d. to 6d. each; Strawberries, 6d. to 8d. per lb.; Currants, black, 5d. to 6d. do.; do., red, 4d. to 6d. do.; Apricots, 1s. per dozen; Cherries, 6d. to 8d. per lb.; Gooseberries, 1½d. to 3d. per quart; Mushrooms, 10d. to 1s. per lb.

CORN.

AVERAGE PRICES OF British Corn (per imperial qr.), for the week ending July 14, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.	1900.	Difference.
	s. d.	s. d.	s. d.
Wheat	25 5	23 7	+ 3 2
Barley	20 4	23 2	+ 2 10
Oats	17 11	19 1	+ 1 2

VARIORUM.

THE CHINESE MARKET-GARDENER.

BY ONE WHO KNOWS HIM.

THE Chinaman is the finest market gardener in the world. He will take an arid patch of land, whose chief characteristic would appear to be rocks and gravel, and in a few months will have transformed this into a flourishing garden. This is partly owing to his indomitable industry, and partly to his exceeding ingenuity. If he excels in reclaiming waste spaces, he stands on a far higher pinnacle still when it comes to selling his produce. In starting business as a gardener, the Chinaman will always look out for a partner before commencing work. This is the first step. The second is to obtain the tools and seeds without paying out the cash for them, because it is against a Chinaman's religion to pay money away if it can possibly be avoided. The way he goes to work is as follows:—He will go over to the neighbouring store, and will interview the storekeeper. It is a strange commentary on our boasted civilisation that in the colonies the storekeeper will more readily trust a Chinaman than he will an European; but such is the case. This is because a Chinaman has never been known to fail in any project he took in hand; also because the Celestial will settle down where he first strikes until he has made sufficient to return to live in luxury in his native land, or is carted back there in his coffin. Once they have obtained the tools and the seeds, the partners will start getting the land into order and planting it. When this has been accomplished, they will turn their attention to their own immediate wants, and will fix themselves up a shanty. They will fashion a rude table and a few chairs out of empty cases, which they will wheedle the storekeeper into giving them, and will rig up a couple of bunks alongside the wall, and will then be settled. Until he has got his land into going order, the Chinaman will live with the nearest of his compatriots. Once the crops are up, one of the partners will do the selling, whilst the other attends to the garden. The Chinese hawker will start away every morning for the town, his baskets—for he carries two suspended on either end of a long pole, which he balances on his shoulders, will be filled to overflowing, and he will call at door to door until he disposes of his load. He will sell 50 per cent. below the price his

European confrères charge, but he will make more out of his goods than they will. This is because every Chinaman is an adept at sleight of hand. He will sell you a measure of Peas which will be full to overflowing; should you, however, measure them later on, you will find a sad deficiency in the quantity. He will sell you so many pounds of Potatoes at an absurdly low price, but when you come to use them you will be astonished to find how few you have got, and yet the scales were well down when he emptied them into your dish. After a time when his circumstances improve, he will invest in a cart and a wretched, half-starved pony or donkey, and will take a larger supply into town every morning; he will also take over more land, and will extend his fence, and will put up a notice that "Ah Lun sells vegetables cheaper than any other gardener in the district," and the European gardeners in the neighbourhood, should there be any such, will gnash their teeth and talk moodily about shot-guns and whips; but before long they will bow to the inevitable, and seek some other clime where the heathen Chinese is unknown. It would not be worth while to kill him, because his place would be filled up by another of his tribe before many moons had passed.

ANSWERS TO CORRESPONDENTS.

BOXES FOR THE PACKING OF PEACHES, &c.: *G. I.*

A box of white deal made with ½-inch stuff, furnished with a hinged lid to be secured by a bit of twine; such a box, if made a foot wide, 4 inches deep, and 2 feet long, is very suitable for the carriage of Peaches and large Pears. Any carpenter or handy man would make them; or you may apply to the horticultural sundriesmen. Scan the advertisements.

CALCEOLARIAS FROM SEED: *H. A.* In the specimen sent, your "great endeavours" extending over six years, as you tell us, have resulted in a variety similar to Prince of Orange, a bedder and greenhouse plant fifty years ago.

CARNATION: *S. A. B.* Your flowers from the Carnation and Pink hybrid are very pretty, and the variety might be useful for cultivation in the border. We should be disposed to speak of it as a Carnation, but the name of Pink would be an equally correct one.

CORRECTION: ROSES AT THE CRYSTAL PALACE.—In our last issue, it was stated that the medal for the premier H.T. bloom shown by a nurseryman, was awarded to Mildred Grant from Mr. Will Tayler, Hampton, and this is the information given in the official list of the Awards, courteously sent us, and bearing the signatures of the two Honorary Secretaries. Messrs. A. Dickson & Sons now write us, however, that the bloom was shown by them, and this is in accordance with our own notes taken at the Show. Messrs. A. Dickson & Sons obtained a Gold Medal at Salisbury for their new seedling Rose Alice Lindsell, the variety that won 1st prize at the Palace in the class for nine blooms of a new Rose.

CUCUMBER LEAVES DISEASED: *T. J. E.* The leaves are excessively thin, small, and deficient in substance, the result of the method of cultivation pursued, or of exhaustion from over-cropping or age. We should advise that the worst plants be removed, and the remainder dressed occasionally with sulphide of potassium, at the rate of ½ oz. in 1 gallon of water.

FIGS: *Young Gardener.* Yes.

GRAPES DISEASED: *E. Strange, Leytonstone, and E. H.* Affected with the "spot" fungus; see answers to other correspondents in our issue for June 30, p. 419; and July 14, p. 40, of the present year.

HORSE RADISH IN LAWN: *J. Tayler Bullock.* Nothing short of trenching the land three or four spits deep will exterminate this plant.

LYCASTE: *J. Hutchison.* Mistakes will occur at busy times. Kindly send another specimen.

MOTH: *G. S.* Death's-head moth—*Acherontia atropos*.

NAMES OF FRUITS: *E. P. N.* We cannot under-

take to name the Cherry from the fruits sent. Get some Cherry-cultivator in the district to call and see the tree. The shoots and foliage are necessary helps in the identification of Cherries and most stone fruits.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*K. S.* *Arenaria graminifolia*, Schrader.—*T. F.*, *Magdeburg.* We expected information as to the origin of the *Lycaste* flower. Please say whether it is from an imported plant or a garden hybrid; and also give any other particulars you can.—*Wm. C. & Son.* *Elæagnus longipes*.—*E. H.* *Rubus chamaemorus*.—*R. O.* *Lilium Humboldtianum*; probably *Kniphofia caulescens*.—*A. S.* *Melilotus officinalis*.—*T. C. C.* *Spiraea confusa*.—*A. C.* *Gladiolus communis*.—*G. B. K.* 1, *Lysimachia vulgaris*; 2, send with flowers expanded; 3, *Centaurea macrocephala*; 4, *Lythrum salicaria*; 5, *Pentstemon barbatus*; 6, *Potentilla variabilis*; 7, send when in flower.—*Daniels Bros.* 1, 2, 3, *Brodiaea*, next week; 4, *Euonymus latifolius*, variety *argentea*.—*E. B.* 1, *Athyrium filix femina*; 2, *Polystichum angulare*; 3, *Santolina incana*; 4, *Lonicera sempervirens*; 5, *Lonicera flexuosa*; 6, *Spartium junceum*.—*Wimbletonian.* *Trachelospermum jasminoides*.—*M. O.* 1, *Silene armeria*; 2, *Campanula Portenschlagiana*.

NOTICE TO QUIT SERVICE: *G. D.* You were not within your rights in looking out for another situation without first acquainting your employer of your intention so to do. You have no redress.

PARSLEY, DEAD AND DYING: *Anxious.* Nothing to indicate what is the cause of the death of the plants, but wireworm is the probable cause. Could you send a sample of the soil taken from the Parsley-bed?

QUITTING SERVICE: *Distressed.* A head-gardener is entitled to one month's notice on quitting his situation, unless gross misconduct can be alleged against him; and in the event of his having accommodation on the place, and the usual allowances, he can claim for these also, in the event of immediate dismissal without due cause.

RUSCUS HYPOPHYLLUM: *X.* Has the flowers on the under surface of the cladode, but without any conspicuous bract. *R. hypoglossum* has the flowers on the upper surface of the cladode, protected by a large lanceolate bract.

TREE CARNATION AFTER FLOWERING: *T. C. C.* Having a hand-glass or small frame, place this on a spent hot-bed, or on the soil in a warm spot outside, turn the plant out of its pot, and bury the ball on its side, as you would a bedding-plant of large size, and wanted to get it low down; surround it with rich sandy-loam as far as the shoots will reach, and then in the ordinary manner layer the stronger shoots at points from 6 to 8 inches from the upper ends after topping the latter; fix each layer with a wooden or wire hook, cover with the sandy soil, pressing it moderately firmly. Afford water with a fine rose-can, put on the light, giving constant ventilation, and a little shade on very hot days for three or four hours. Layers should be fit for removal in about a month. Afford water to the soil in which are the layers, but be not lavish with overhead waterings, as these remove the protective waxy layer on the "grass," and do more harm than good. Cuttings taken off from growing plants in January can be easily rooted in a mild hot-bed without bell-glasses.

WATER: *K. S. F. W.* We notice no substance in the analytical contents of the water likely to be harmful to plants after it has been exposed to the air for some time, before making use of it for Tomatoes.

WORMS IN VINE-BORDER: *H. D.* Apply clear lime-water in order to bring the worms to the surface, and then collect them. Do this repeatedly, and you will be sure to greatly lessen their numbers.

COMMUNICATIONS RECEIVED.—*W. Taylor.*—*Fletcher.*—*E. C.*—*H. H. M.*—*E. Croft.*—*C. B.*—*T. C.*—*H. F.*—*J. Veitch & Sons.*—*W. Fulford.*—*B. W.*—*W. E. G.*—*E. C. D.*—*J. W. T. B.*—*P. H. R.*—*Clemson College, S.C.*, U.S.A.—*Wild Rose.*—*G. W.*—*A. B.*—*S. A.*—*J. C.*—*J. W. Harstberger.*—*W. L. M.*, Texas.—*E. D. G.*—*F. H. & Sons.*—*W. E. G.*—*W. T. H.*—*A. D.*—*W. E. G.*—*X. Y. Z.*—*Harry Gillard.*—*W. W.*

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—*A. W.*—*W. W. Johnson & Son.*



VIEW IN ORCHID ROCKERY HOUSE, MESSRS. J. VEITCH & SONS' NURSERY, KING'S ROAD, CHIESEA, LATE IN MAY, 1900.



THE

Gardeners' Chronicle

No. 709.—SATURDAY, JULY 28, 1900.

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THE WINNS, WALTHAMSTOW.

IT seems a very curious instance of the irony of fate that Walthamstow, which, as recently as 1777, was practically part and parcel of Epping Forest, has only just escaped the reproach of being parkless. Thanks to the generosity of several members of the Lloyd family (the owners of the *Daily Chronicle* and other newspapers), Walthamstow can now boast of one of the most pleasant public gardens to be found anywhere in the suburbs of London. The gift is all the more noble seeing that Walthamstow has no claim whatever on the Lloyd family. The gift was announced in a letter written two years ago, and addressed to the District Council by Mr. Frank Lloyd. This letter runs as follows:—

"I am writing on behalf of several members of the Lloyd family to state that they are willing to purchase from the executors of the late Mr. Lloyd the ornamental grounds surrounding the house known as The Winns, in Forest Road, consisting of about 9½ acres, and convey them to the Council free of cost, provided the latter will undertake to maintain them as a recreation-ground for the use of the public for ever; and provided the Council will purchase from the executors the adjoining piece of land, about 9½ acres, to be used as public playing fields in

connection with the recreation grounds, at a valuation to be made by an independent surveyor to be agreed upon by the council and the executors."

It is scarcely necessary to say that this munificent offer was immediately accepted; the adjoining piece of open land was purchased, and Mr. H. E. Tickner appointed superintendent, from about 150 candidates, in October last. Seeing that for many years the house has been uninhabited, and the grounds entirely neglected, the amount of work necessary to bring the place into anything like a presentable appearance has been enormous. Mr. Tickner has observed a very wise conservatism in his alterations. Nature is rarely improved by a faking-up policy; and beyond a few new walks, The Winns will be pretty much the same as it was a century or more ago. The old green-houses, and an enormous kitchen and wash-house, have been completely cleared away, and the front entrance will, when finished, be a very handsome one, such as a public institution should be; at the back of the house a sloping lawn has been transformed into two pleasant terraces. The fine cricket-ground has, like the terraces, been re-turfed, and matches have been played there for some months past. A tennis-court of about 1½ acre has been formed, and will prove a great boon to the young ladies of the district.

But the great charm of the place lies in the great age and magnificence of its trees. They are not the mere growth of the last hundred years or so, but of many centuries. The gardens are almost completely shaded by what the poets would call an "umbrageous growth." There are fine specimens of Chestnut, Lime, Copper-Beech, Hawthorn, Acacia, two or three magnificent specimens of the Spanish Oak, and perhaps one of the loveliest specimens of the Weeping Willows to be found in suburban London. In the front of the house there is a fine specimen of the Weeping Ash. Among the shrubs there is a fine clump of Rhododendrons. One of the glories of the place is a fine moat, a quarter of a mile in length; this has been emptied and refilled, no less than 3000 yards of mud having been taken out. The island which the moat surrounds is approached by several rustic bridges. The Council have wisely decided not to allow of boating; and instead, waterfowl have been introduced. There are two curious sun-dials in the garden; one of these was formerly at old Woodford Hall, and the other comes from Shern Hall (for several years the residence of Cardinal Wiseman), Walthamstow, and is said to date from the time of Oliver Cromwell. The quaint little belfry of the mansion itself contains a bell which is dated 1754.

Few London suburbs have grown with such rapidity as Walthamstow. Tymms's *Family Topographer* states that in 1821, the place consisted of 722 houses, and 4304 inhabitants. Just sixty years later, the population was quoted at 21,715; this year it is estimated at 95,000, and new houses are being erected at the rate of about 500 per annum. It is essentially a working-class district, the Great Eastern Railway running an excellent train service which is practically continuous during the whole twenty-four hours, workmen's tickets being 2½d. return. The Winns is almost in the heart of this busy community, so that this noble gift will be appreciated, is a theory that does not call for much proof.

The Winns, like Walthamstow itself, cannot boast of much history. We know that Mr.

Samuel Pepys visited Walthamstow, that Benjamin Disraeli for a time attended a school here, and that Dr. Cogan who, with Dr. Hawes, founded the Humane Society, died here in 1818. But beyond these three facts, Walthamstow has not much to boast of in the shape of history—on the other hand, it has no chronicles to be ashamed of. The Winns is the old manor house; it is solid and stately, but without any pretensions to architectural beauty. It is supposed to have been built about 1700, and was the birthplace of one of the greatest poets of the nineteenth century, William Morris, who was born here on March 24, 1834, and this fact alone gives the house a distinct interest. The late Mr. Edward Lloyd succeeded Mrs. Morris, and lived here for many years; but the rapid growth of cottages on all sides deprived The Winns of much of its charm as a private residence, and it has been unoccupied for about fifteen years. The house, which has a magnificent hall and staircase, and great rambling rooms, is to be used for concerts, meetings, and as a museum. It ought also to contain a library of reference and other books, dealing chiefly with the history and antiquities of the county in which it is situated—Essex. The Society of Arts might be approached with reference to affixing one of their circular tablets on the outside of the house communicating the fact that The Winns was the birthplace of William Morris, the gifted author of *The Earthly Paradise*. W. Roberts.

NOTES ON THE ROSE EXHIBITION AT THE CRYSTAL PALACE, JULY 7.

IT was anticipated by most Rose-growers that the character of the season through which we have passed would have a damaging effect on the great metropolitan exhibition, and these anticipations proved to be correct. There is often a tendency with some people to try and make things out better than they are; while with some who have in their mind perhaps some very successful exhibition in the past, the tendency is in just the opposite direction. Exhibitors are more or less influenced by their own personal success or failure in gauging the character of the exhibition; and as an outsider who has attended all the metropolitan exhibitions of the Society, and has watched their gradual development, I am bound to confess I have seen better exhibitions, but I have also seen worse. The weather, of course, has a great deal to do with this; the cold we had at the end of May destroyed the hopes of many an amateur, while the drenching rains in June interfered most materially with the exhibitor's Tea Roses. The report given in the *Gardeners' Chronicle* on the 14th was so complete in its details that it leaves me the task only of taking up a few of the points which seemed to me most noticeable in the exhibition.

The first thing that must strike any one who has visited these shows is the steady advance which has been made by Irish growers. I say Irish growers and not Irish Roses exclusively. The Challenge Trophy in the nurserymen's division, and the 1st prize for forty trebles were awarded to Messrs. Alex. Dickson & Sons, of Newtownards and Ledbury; not one of these flowers was grown at Newtownards. Some years ago Messrs. Dickson became the tenants of the ground formerly used by Mr. W. J. Grant, as their climate and position in the North of Ireland were not propitious for the

proper development of the flowers, except in very exceptional seasons; the present must have been one of those seasons, for Mr. Hugh Dickson, the brother of the head of the Newtownards firm, carried off the 1st prize for forty-eight distinct varieties, while two of the medals offered for the best Rose in the amateurs' division were won by Mr. Bewlay of Rathmines, near Dublin, with fine blooms of Mrs. W. J. Grant, H.T., and Muriel Grahame, T. It is just possible that these successes may revive the question that has been more than once mooted, "Why should not the National meet in Dublin as well as in Edinburgh?" The two cases are very different, and knowing as I do what the Irish Channel passage may be, I think it is simply impossible.

There is one other point that struck me in looking at the exhibition, and I believe it is one on which the Society will have to come to a very decided judgment, I mean the dressing of Roses; it has been before the committee of the Society, and it was then seen that there were difficulties surrounding the subject, and a compromise was resorted to, and the *over-dressing* of Roses was prohibited. This, like most compromises, was ineffectual, and the practice has gone on quite as strongly as it did before. I do not think that the practice is fair, it greatly increases the size of the flower, and as this is a point much looked after by judges, it gives those who practice it an unfair advantage; in other cases, by the turning down of the outside petals, the character of the flower is quite altered, but I cannot say I think improved.

Another point which was very noticeable was the absence of any varieties exhibited for the Gold Medal. Last year, it will be remembered, that no Award was made for any exhibition variety, and the Gold Medal was awarded for a garden Rose. This year no variety was put up for it; whilst last year there were several, though they were not successful. I do not think that this a matter over which many tears need be shed. Such perfection has been attained amongst exhibition Roses, that it must be very difficult to bring forward one that is worthy to stand beside those we already possess. There is, however, always a desire for novelty, and there are many flowers which we should gladly welcome. A yellow hybrid perpetual would be a great boon, and so would a pure white A. K. Williams, or a good pure yellow Tea (not a Noisette); but there does not seem to be any likelihood, either abroad or at home, of those treasures being found.

Another remarkable feature of the exhibition was the display of garden Roses. These were, as usual, exhibited in great perfection by Messrs. Paul & Son and Messrs. Cooling & Son, who always run a very close race, though the victory mostly comes to the first-named firm.

There is one word of caution I think necessary on this subject: no one can admire these garden Roses more than I do, but I see that they are not generally adapted for small gardens. They are mostly rambling in habit, and require a considerable amount of room. I have found this out in my own small garden. There are a great many of them that I should like to have, but I can find no place wherein to put them, and unless they are allowed to ramble I think their beauty is considerably diminished. I do not lay much stress on the fugitive character of some of them, and I think this is a point which most lovers of Roses will consider of little moment. A defect which most of them have is their non-perpetual character. We should like to have them continually in flower

throughout the season, but this, alas! we cannot get, although there is hope that Mr. Prince's new semi-double will be perpetual.

There was one episode in the competition which greatly interested me, and that was the competition for a Tea Challenge Trophy, for which there were several competitors, although the contest really lay between two of these exhibitors, one of these was Mr. Alexander Hill Grey, and the other the Rev. F. R. Burnside. I was not far from the stand which the judges so carefully examined, they were quite half-an-hour in coming to a decision. I know the gardens from whence the flowers came, and nothing could be possibly more dissimilar than they are.

One is situated in a beautiful and well sheltered position in the neighbourhood of Bath. Mr. Hill Grey is well known as a most enthusiastic lover of Tea Roses; when some years ago he left the neighbourhood of Dunkeld, in Scotland, and determined to find a place in the south of England where he could grow them as he wished, after going through most of the southern counties he fixed his home at Bath; there in a sheltered position close to the city he laid out his model Tea Rose-garden,



FIG. 11.—ONCIDIUM LURIDUM.

he planned various terraces, and was lavish in his expenditure to make his garden all that could be desired, and has shown his success by carrying off many of the chief prizes offered by the National at their several exhibitions.

Mr. Burnside, on the other hand, occupies a garden on the south-east coast on high land, adjoining the South Foreland Lighthouse, and swept by the gales which are so frequent in the English Channel; yet for more than half an hour, the judges were unable to decide which of these two should gain the coveted prize, ultimately, however, it fell to Mr. A. Hill Grey.

Another and most pleasing feature of the exhibition was the large number of the members of the National Rose Society, who met together on the occasion. Our President was there, our new Treasurer, Mr. Charles E. Hayward; Mr. Mawley was of course there, indefatigable as usual; and our most successful amateurs, including such men as Messrs. Lindsell, Burnand, C. J. Grahame, G. O. Orpen, Whitwell (no longer an exhibitor, but still a lover of the flower), Revds. J. H. Pemberton, Page Roberts, Foster Melliar, H. A. Berners, F. R. Burnside, &c.; and amongst professional growers, Messrs. Geo. Paul, Alex. Dickson, Geo. Bunyard, Piper, Harkness, Cecil Grant, Frank Cant, W. J. Jefferies, Geo. Cooling, and others. It was especially pleasant to me to receive so many hearty greetings, and to be assured of the

continued good will of those with whom I have been associated for so many years. There seems to me no diminution of interest on the part of our members, and as far as one could see, there is every prospect of the continued prosperity of our much valued and highly useful society. *Wild Rose.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CRISPUM, VAR.

A FLOWER of an ordinary form of *Odontoglossum crispum*, but with a much developed crest, which some consider indicative of *O. × Wilckeanum*, but of which variations in undoubted forms of *O. crispum* are constantly appearing, is kindly sent by M. Florent Claes, of Etterbeck, Brussels, who also sends the following interesting communication:—

"I have much pleasure in forwarding you a flower of *Odontoglossum crispum*, and should be very glad to have your opinion whether this, because of its crest, should be classed with *O. × Wilckeanum*. I have another plant with the same characteristics, and both came from the same locality where I found the *O. crispum* Mme. Fl. Claes, which I exhibited on June 19 at the Drill Hall, and which on account of its crest and its yellowish-white colour and peculiar spotting some thought a form of *O. × Wilckeanum*. But before that theory can be accepted, the presence of *O. luteo-purpureum* has to be proved; and I must say that during the ten years I have collected in the region from whence my importations come, I have never met with a single plant of *O. luteo-purpureum*."

LINDENIA.

The last published parts contain coloured illustrations and notes on the following plants:—

CATTLEYA TRIANÆI, Lindl., var. *EXCELSIOR*, L. Lind., t. DCCII.—Segments white; anterior lobe of lip very broad, roundish, deep purple, edged with white.

CATTLEYA TRIANÆI var. *REGINÆ*, t. DCCXVII.—Segments white, petals broad, crenulate, lip white, with a central orange blotch, and a purple spot on the front lobe.

CYMBIDIUM GIGANTEUM, Wallich, t. DCC.—Segments yellow, with narrow purple stripes; lip yellow spotted. It is a native of tropical Himalaya, from Nepal to Bhotan, at considerable elevations.

DENDROBIUM CRASSINODE, Rehb., var. *ALBIFLORA*, t. DCCIII.—Segments white; lip with a golden-yellow throat.

EPIDENDRUM DICHROMUM var. *AMABILIS*, t. DCCXC.—Flowers in racemes; each flower about 2 inches in transverse diameter, sepals oblong, pale violet; petals obovate slightly, stalked, pale lilac; lip three-lobed, lateral lobes erect, purple striped; anterior lobe rich purple.

ODONTOGLOSSUM ADRIANÆ, L. Lind., var. *ARCUS*, L. Lind., t. DCCII.—In this variety the segments and lip are thickly studded with irregular purplish spots.

ODONTOGLOSSUM × ADRIANÆ var. *DECORA*, L. Lind., t. DCCXVIII.—Flowers rounded, circular in outline, flattish segments, broadly ovate, short, with purplish-brown blotches on a white ground.

ONCIDIUM HEMATOCILUM, Lindl., t. DCCIV.—This old variety turns out now to be a hybrid between *O. lanceanum* and *O. luridum*. It is said to be identical with a plant figured in our columns in 1848, p. 159, and reproduced in the present issue (see fig. 11).

BURFORD, DORKING.

THE weather never seems to have much effect on Sir Trevor Lawrence's pretty garden. The hot weather has had no ill-effect on the gardens at Burford, although doubtless more than the usual pains have to be taken to preserve freshness of the plants. Indeed, some of the plants usually met with in greenhouses, but which are there either left out in suitable situations or planted out early in the summer, are in fine condition. Among the permanently planted we remarked a fine bush of *Abelia rupestris* hybrida, and a strong specimen of *Solanum Wendlandianum*, well furnished with buds, while the great beds of *Crinum Powellii* and *C. Mooreanum* would soon be a mass of bloom.

Among those destined to pass the summer outdoors, *Cassia corymbosa*, *Swainsonia galegifolia* splendens, *S. g. alba*, *Clianthus Dampieri*, and many other tender plants, are covered with flowers; and *Aristolochia grandiflora*, *Gloriosa*

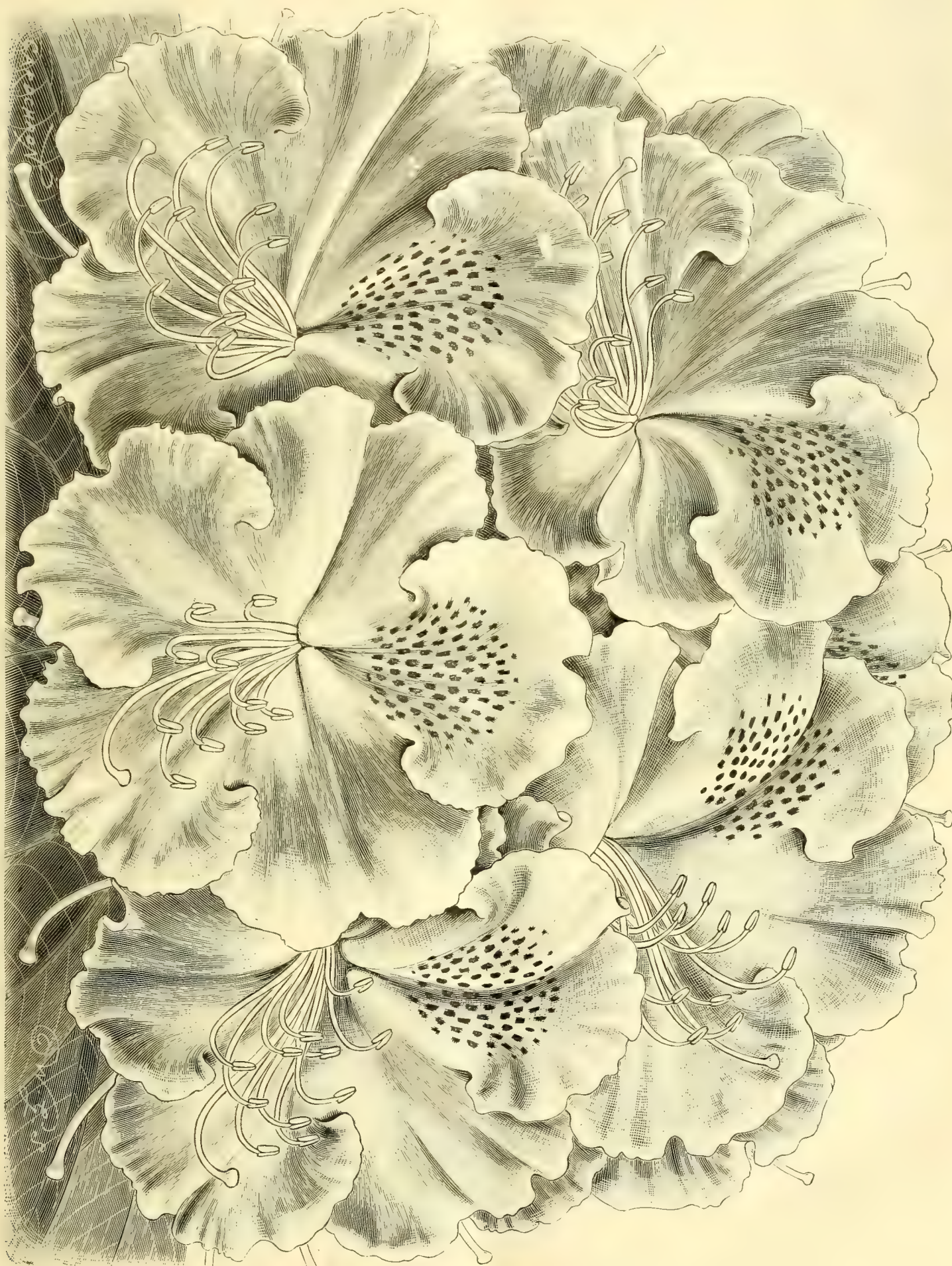


FIG. 12.—RHODODENDRON PINK PEARL, GROWING IN THE GARDENS OF SIR TREVOR LAWRENCE, BART., BURFORD LODGE, DOCKING. (SEE P. 64.)

superba, and other greenhouse climbers, doing far better than they would under glass. Many of these plants, Mr. W. Bain, the gardener, finds the culture in summer more satisfactory out-of-doors, especially such as are liable to infestation by red-spider and thrips under glass.

The new Water-Lilies are most successful innovations at Burford, and a fine show is made with them in the basin and the lawns. The lobes around the fountain are filled with variously tinted, bright coloured Begonias, and the effect is very fine. In the sheltered plant-ground also the coloured Water-Lilies are successfully grown in tubs, and it is hoped also to introduce the Nelumbiums, by establishing them first in this way.

Flowering Cannas are among the showiest and most ornamental plants, and both in the beds in the open ground and in the greenhouse, a fine display is made with these plants. *Richardia Elliotiana* and *R. Pentlandi* are in the open air at Burford, and are sending up their golden spathes profusely, while the plants are much more dwarf and compact than when grown under glass. In one bed the *Mariposa Lilies* are flowering well. The *Roses* are at their best, and *Crimson Rambler* one of the brightest plants in the garden; *Carnations* are finer than usual this season, *Isinglass* being one of the best, and most profusely flowered; some new forms of *Iris Kämpferi* are fine, and among other specially noteworthy things remarked were *Eremurus robustus* *Elwesii*; *Itea virginica*, a pretty bush, covered with flowers; *Incarvillea Delavayi*, which had been in flower for a considerable time; some fine bushes of the white satin flower, *Romneya Coulteri*; beds of the carmine *Pentstemon barbatus*, and *P. Torreyi*; one of the dwarf blue *Aster Thomsoni*, which is a very desirable and distinct plant; tufts of *Helenium pumilum grandiflorum*, dwarf, and covered with large yellow blooms; and in the greenhouses a good show of *Begonias*, hybrid *Streptocarpus*, *Anthuriums*, and a large number of other fine and rare flowers.

The *Rhododendrons* are, of course, over for the season, but visitors to the Drill Hall will remember the fine trusses of *Pink Pearl*, with its lovely pale rose-coloured flowers. Our illustration (fig. 12, p. 63) was taken from a specimen obligingly put at our disposal. This beautiful variety was sent out by Messrs. John Waterer & Son.

THE ORCHIDS.

Of late the culture of Orchids generally has been better understood than formerly, and many growers have succeeded in growing a few specialties, such as *Odontoglossums*, *Cattleyas*, and *Lælias*, to something approaching perfection; but no one in the whole of Europe has ever got together anything like the collection of different species, and varieties, and hybrids of all kinds as has Sir Trevor Lawrence, and the few who have attempted extensive collections, fail to attain the uniformly good results which he on a much larger scale secures.

The present time is one in which the Orchids in flower are the least numerous, and yet the Burford collection has a good number of fine things in bloom, some of them combining both botanical and horticultural interest. *Cattleya Warscewiczii*, *C. Gaskelliana*, *Lælia tenebrosa*, and a few other *Lælias* and *Cattleyas* are in bloom in more or less quantity; the several cool *Odontoglossum*-houses, though having few flowers, contain such a perfectly vigorous and well-cultivated lot of plants, that the Orchid specialist would enjoy the sight of them, and especially of those contained in the last new structure arranged for them. The same remarks apply to the fine lot of *Phalænopsis* and *Arides*, which are, perhaps, the two classes of Orchids which most growers fail to get satisfaction out of. A moderate degree of success is not sufficient at Burford, and much energy and skill are exercised in getting plants to do their best. For example, the Burford collection is noted for its many fine hybrid *Calanthes*, of which a sufficiently good display has been seen every year

at the Royal Horticultural Society's meetings. But it was thought that they might be made to do better; and this year the specimen-plants were placed singly on earthenware stands, the bottom pans of which contain water, the plants being on pedestals in the centre—and the result is, that they have attained gigantic proportions, and it is hoped that their flower-spikes may be proportionately strong.

The Masdevallia-house has in bloom a few of the showy, and a larger number of the singular species, such as the mossy-stemmed *M. muscosa*, and the beetle-like *M. triaristella*, and *M. trichate*. Here also is a healthy plant of the new *M. deorsa*, which sends its long leaves of a purplish-green metallic tint downward, a peculiarity not before observed in any species. In flower also are *Pleurothallis strupifolia*, *P. Grobyi*, *P. picta*, *P. macrolepharis*, and other species with insect-like flowers; some *Ocotelemias*, *Stelis*, &c.

In the large stove-house, *Vanda* × *Miss Joaquim* is flowering well in company with its parents, *V. teres* and *V. Hookeriana*, both of which it surpasses in beauty. Among a large number of hybrid *Cypripediums* in flower are *C. × Rothschildo-Lawrenceanum*, one of the showiest of the *Rothschildianum* hybrids; *C. × Rothschildo-superbiens*, *C. × Rothschildo-tonsum*, the pretty *C. × lavigato-purpuratum*, *C. × Chamberlaino-insigne*, *C. × Clinkaberryanum*, and others, both species and hybrids. Among the rare and interesting varieties was a noble plant of *C. Stonei platytænum*, which Sir Trevor Lawrence remarks is a better grower than the old typical species.

The house in which the centre stage is occupied by fine plants of different *Sobralias*, always contains a number of good species and varieties in flower. At present, the *Sobralias* in bloom are *S. × Amesiae*, *S. Lucasiana*, and *S. macrantha*; in the same range in bloom being *Acineta Humboldtii*, *Epiphronitis Veitchii*, *Dendrobium Victoria Regina*, well furnished with bunches of violet-blue flowers; *Epidendrum pristis*, *E. fragrans*, *E. gracile*, and other *Epidendrums*.

Seeing the success here attained with small-growing and delicate species, it is worthy of remark that Mr. W. H. White, the Orchid-grower at Burford Lodge, attributes much of the success in this direction to the plants being kept as near the glass of the roof as possible; the very small species, which invariably perish if grown among other plants on the stages, being always suspended or placed on elevated staging, where a number of species of similar habit of growth can be placed well up to the light together.

Among other rare plants in flower were noted the handsome *Bulbophyllum longisepalum*, the feather-lipped *B. barbigerum*, *Cirrhopetalum chinense*, *Phalænopsis Mariae*, *Quekettia Jenmani*, *Oncidium* × *caloglossum*, *O. hians*, *O. Jamesoni*, *Tainia speciosa*, *Angraecum filicornu*, the remarkable *Maxillaria scurris* (illustrated in fig. 13, p. 65), *Geodorum pictum*, the showy *Stanhopea Rodigasianum*, *Luisia zeylanica*, *Saccolabium Hendersonianum*, *Sarcanthus peninsularis*, *Dendrobium Hughii*, *D. × rhodostoma*, and other *Dendrobiums*; *Odontoglossum nævium*, and a number of strong plants of new and rare hybrid *Cattleyas*, *Lælias*, and *Lælio-Cattleyas* in flower-sheath.

PLANT NOTES.

OPUNTIA PSEUDO-TUNA.

THIS is the finest of all the hardy *Opuntias*, and most free in growth. It is now flowering in the Cambridge Botanic Garden for the first time. It has been cultivated for about eighteen years, but has never flowered until now. Even now it is probably due rather to the heat of last summer than to any final attainment of maturity. The flowers are about 3½ or 3¾ inches in diameter when naturally open in ordinary sunshine, but they have a possible spread of about 5½ inches. They are orange coloured, or

they might be described as ruddy yellow. The two specimens, of nearly equal size, are magnificent, the larger of the two being 10 feet wide, 5 feet from front to back, and 4 feet high at the highest point. They have a decumbent habit, and the stems are distinctly glaucous, though less so than in the case of the most glaucous species. The spines are white. This is the plant that has been hitherto known and distributed as *O. Engelmanni*, but by the courtesy of the Director of the Royal Gardens, Kew, it is now known that it is really *O. pseudo-tuna*. Under the former name, the same plant apparently, is figured on p. 147 of the November number of the *Cactus Journal* for 1899. The free-flowering *O. bicolor*, now covered with buds, will shortly be very showy. The specimen measures 7 feet wide, 3 feet from front to back, and about 2 feet high. An account of the Cambridge hardy Cacti is given in the number of the *Cactus Journal* above quoted. *R. Irwin Lynch.*

GERBERA JAMESONI AT EDINBURGH.

IN view of the disappointments experienced by some in trying to grow *Gerbera Jamesoni* in the open, it may be of service to remark that it is to be seen flowering in one of the borders beside the houses at the Royal Botanic Gardens, Edinburgh. It has only had the protection of a glass-frame in the winter. With this covering it has thriven, and produced several of its beautiful intense scarlet blooms. It seems to be one of those plants which are just on the border-line between hardness and tenderness in our climate, and which only requires a little protection. In mild districts this *Gerbera* ought to do well; but though I am much farther south than Edinburgh, I have, up till now, failed in establishing it without covering in winter. I am, this year, trying *G. Kunzeana* and *G. lanuginosa* in the open. *S. Arnott, Dumfries.*

CARNATIONS.

WHILE searching into the history of the Carnation I have been much struck with the part the yellow-ground varieties have had in the improvement of the bloom; "Master Tuggie, his Rose Gilloflower," for instance, is the earliest variety about which we have any account that had perfectly smooth-edged petals, while the flower was imbricated in form, as all the others of this section appear to have been; and though the colour was a deep red, we have Parkinson's authority that it was raised from a yellow Carnation. He was, indeed, so impressed with the distinctness of these "yellow or orange tawny Gilloflowers," that he formed them into a distinct section, naming the plant "*Caryophyllus silesiacus flore-plenominato*;" and it is curious to observe that the flowers ranged in colour from a pale yellowish Carnation colour, through hues of orange and scarlet to deep red. The designation gives us a clue to the country whence the yellow Carnation originated, because it is identical with that employed by Clusius for a section of Carnations which the latter saw for the first time at Vienna, and which were sent from Silesia. The colour of the flowers was quite distinct from that of all cultivated Carnations, having been less red than that of *Lychnis chalcadonica*, and tending somewhat to flesh, not improbably the colour we now call apricot. The yellow Carnation which Mr. Nicholas Lete procured from Poland and presented to Gerarde, in all probability was identical with these, and would be derived from the same source.

The yellow Carnation possessed another characteristic, which in the nature of things was bound to exert an overwhelming influence on the future race of Carnations; that was the freedom with which it seeded in comparison with the ordinary varieties, which seldom bore seeds at all. Along with this property it, however, possessed another of a less desirable nature, a weakly habit and spindly growth, which, considering the international intercourse of florists, may have had not a little to do with the generally poor growth of Carnations up to

the time Mr. Martin Smith took them in hand and infused a previously unknown vigour into their constitution.

In Rea's time all the best Carnations were imported from Holland and Flanders, and Rea attributed their inherent weakness to their having been raised from seeds, and he imagined strangely enough that older sorts had not been seedlings. Though he does not mention yellow Carnations, we must not assume that they were not cultivated, especially when we find his son-in-law Gilbert naming "tawny," of varying shades, and under "Scarlets" the varieties "Golden Fleece," "Golden

the ordinary cultivated forms, and that not alone in this country, but perhaps even more largely in France, Flanders, and Germany, in each of which very lovely combinations of colouring are found in many of the yellow-ground or buff-ground varieties. R. P. Brotherston.

MUMMY WHEAT.

THE ordinary specimens of so-called Mummy Wheat have no authenticity whatever, and the experiments hitherto made are discredited. M. Gain has recently examined several specimens of

the cellular organisation of the albumen is not indispensable for germination. In grasses, indeed, the albumen is passive; it is the embryo, or the enzyme within it, that attacks, dissolves, and digests it.

For an ancient Wheat-grain to germinate, three conditions are essential: first, that the reserve materials should remain chemically intact; this is the case with much of the Egyptian Wheat and Barley. Second, that the embryo should preserve such an organisation that the enzyme necessary for the digestion of the reserve materials may still be produced. Third, if the preceding condition is

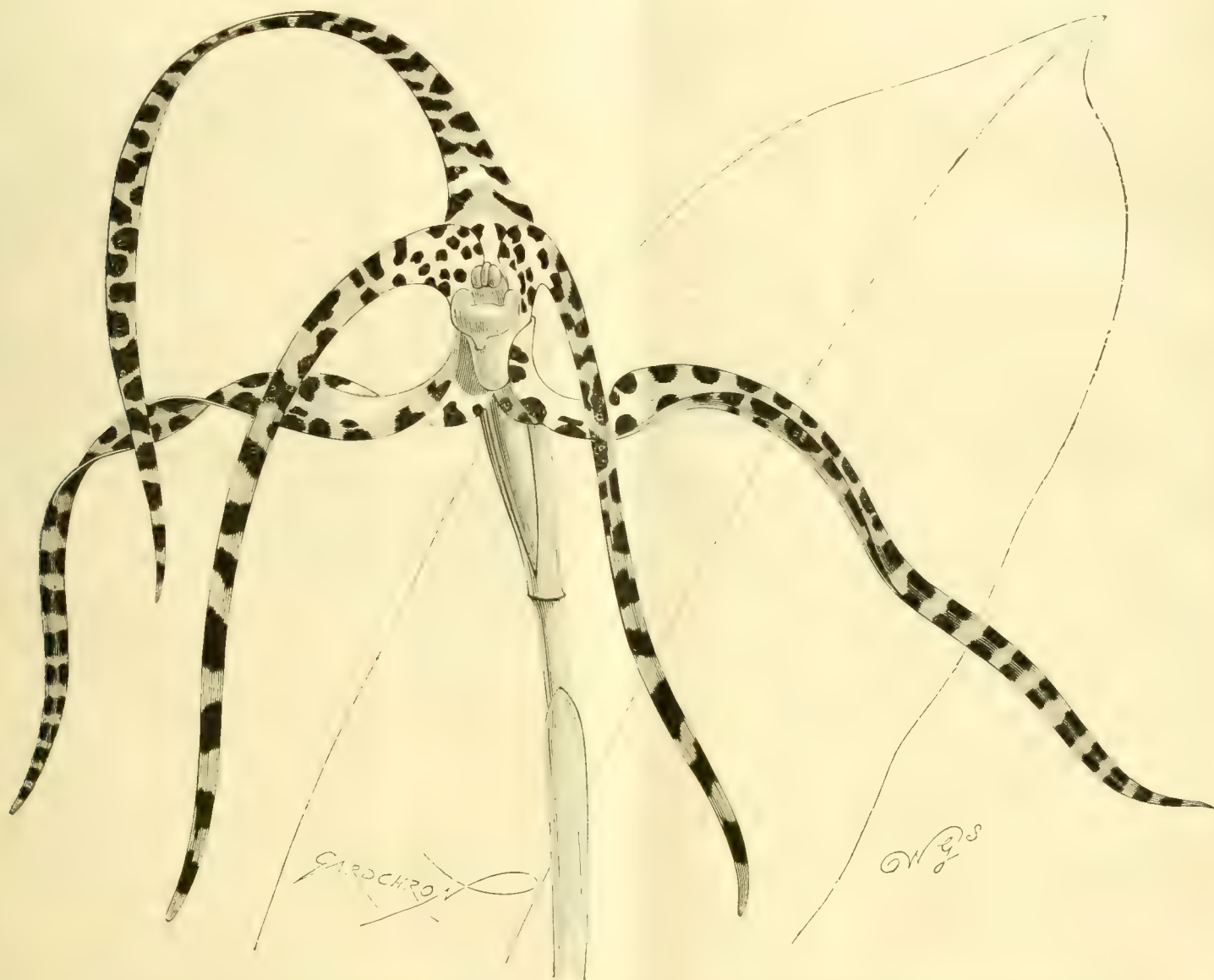


FIG. 13.—*MANILLARIA SCURRIS*: FROM A PLANT IN THE GARDENS OF SIR TREVOR LAWRENCE, BART., BURFORD LODGE, DORKING.
(SEE P. 64.)

Grove," "Prince of Orange," and "Princess of Orange," are included; while of the only "two kinds that are of three colours," the one is Bedford-Tawny, Tawny scarlet, and white."

I find therefore that to Silesia, either Polish, or Hungarian, or both, we are indebted for the yellow Carnation, which along with a regrettably weak constitution, produced seeds freely, was singularly sportive both as to form of petal and of flower, by which means an improvement on the rough old varieties was first rendered possible. That self-colours bluish-rose, a crimson, &c., of improved types were procured from it, and that it was the earliest section to yield flowers with three colours, and it has all along and up to the present time continued to provide remarkably beautiful breaks from

varying ages, and shows that while the farinaceous matter may be unchanged, the embryo dies, and specially the ferment or enzyme, which causes the solution and digestion of the starch, is no longer capable of doing its duty, so that the embryo can no longer grow.

To the number of the *Comptes Rendus de l'Académie des Sciences* for June 11, M. Edmond Gain contributes a paper dealing with this subject, in which he says that in such ancient seeds, when subjected to microscopical examination and other tests, the organisation of the albumen is found to be still such as to show that certain nutritive materials have varied little chemically, and are susceptible of being utilised by a living germ.

Further, M. Van Tieghem has demonstrated that

realised, it is necessary, further, that the embryo remain in contact with the reserves to ensure their digestion. Now examination shows that the adhesion of the germ to the albumen no longer exists, but that the embryo or germ is quite detached. The cells of the embryo have, moreover, undergone a chemical change.

The conclusions arrived at by M. Gain are, on the whole, contrary to the opinions held by Alphonse de Candolle and other authorities who maintained that seed might germinate after centuries. He considers that these Egyptian cereals, although they appear to be in perfect preservation, no longer possess a cellular organisation compatible with germinating power. Their reserve materials are often chemically well preserved and suitable

for a living germ, but the embryo itself has undergone a very decided chemical alteration, and is no longer capable of manifesting life. This chemical alteration even indicates that the latent life of the seed has long since been obliterated.

VEGETABLES.

FAILURES WITH VEGETABLES.

GARDENERS might confer benefits on the craft if they would more frequently speak of their failures in vegetable culture, as a discussion in print would probably bring out the reasons for these mishaps, and the best methods for avoiding them. Most gardeners in large establishments know that if a failure is known by the cook to have occurred, it is not always an easy matter to tide over or make good the deficiency. Spinach, for instance, may be obtainable in such abundance in the spring and summer, and yet with the very best methods the supply will fail in July and August. I may be told that Spinach is not a necessity, then happy is the man who is in such a position and who gets the sympathy of his fellows when the best intentions are thwarted by the weather. So far I have rarely met with such instances, and found the best remedy for deficiency of common Spinach was to have substitutes growing in quantity. Spinach is only one vegetable, and, of course, failures occur in summer; and in justice to readers residing in the south it should be stated that Spinach fails more frequently in the south than the north, which may be accounted for by the smaller rainfall.

At Syon we have two strings to our bow, and we have the New Zealand Spinach, *Tetragonia expansa*, to fall back upon, and this is quite happy with tropical weather, and its thick, fleshy, Mesembryanthemum-like foliage, will continue to be fit for cooking for a long time if the plants are put out on good holding soil, and afforded water in dry weather. The colour of the leaves is all that could be desired, and their quality as a vegetable good. Another even more easily grown plant is Perpetual or Spinach-Beet, one of the most useful culinary plants all the year round, quite hardy, and the possession of a large root renders it more independent of the weather. If two sowings be made, one in early spring, and another in June, the produce of the plants will last till the frost comes, for immediately one crop of leaves is gathered from a plant, fresh leaves appear. Gathered in the young state it is a valuable substitute for a round-leaved Spinach, and differs but little in quality.

Turnips seldom offer any difficulty early in the year, except that the plants will bolt in some soils if sown very early; but that is not the sort of failure that I experienced this season, which was due to the Turnip-flea, which devoured them in the seed-leaf. To lose one's Turnips in the spring is a serious loss to the gardener, but at Syon we sow the long-rooting French varieties in frames, and we were in a measure independent of the out-of-doors sowing that was destroyed. A substitute for white Turnips may be found in the garden Swede, which if sown in August or early September in the south, will afford small, solid, sweet roots for the needs of the Scotch gardens, which continue good till the end of April. There are two excellent varieties in Sutton's Yellow and Sutton's White, both excellent. The top growth is small in both varieties, and they withstand almost any degree of cold. Another point worthy of note is that the two garden Swedes noticed above are valuable for sowing early in April, and never fail to afford a late summer supply—that is at a time when sowings are carried off by the Turnip-flea and the drought.

Another disappointing vegetable in some kind of soils is Carrots; and here one may also meet the difficulty by sowing the stump-rooted small varieties at short intervals during the year, for these small-rooted Carrots will grow where large, long-rooted ones fail; and, moreover, these small

Carrots, when sown in July, afford useable roots in winter and early spring. They are hardy enough to be left in the soil, and drawn when wanted. The land for this crop should be heavily dressed with soot or lime, and well worked, and be neither too wet nor heavy.

The Onion in some gardens does badly, fails to form bulbs, and there are great losses from the Onion-fly. Better success follows the sowing of spring varieties in the autumn, as during the winter and spring the pest is not troublesome, and the bulbs mature early. The same remarks apply likewise to Parsley. I have frequently secured a crop of this plant by sowing the seeds in cold frames or pots, and planting out when the seedlings were large enough to handle. Indeed, many vegetables can be raised thus when autumn sowings fail; such plants as Spinach, Cauliflowers, and even Beet, do well with pot culture at the start—the first two from start to finish if grown in cold frames. The best early Cauliflowers that I ever saw were grown in the north in pits with an ordinary turf wall, with thatched hurdles for a top covering in severe weather.

Salads are, in our variable climate, more difficult plants, as the correspondence in these pages a year or two ago plainly showed. In spite of glass or frame protection they are never too plentiful in the early part of the year; damp is equally fatal to them as cold, and I find it advisable to plant boxes and place these early in January in fruit-houses for a first supply of early Lettuce. There are other crops which fail sometimes, but these are of lesser moment, and I need not specify them here. *G. Wythes.*

FOREIGN WORMS IN ENGLISH GARDENS.

It were strange if the intercourse which has gone on for ages between our own and other lands had not resulted in the introduction of a variety of curious life-forms which are different from our own. Perhaps the greater wonder is that so few of these foreign creatures have found our soil, climate, vegetation, and general environment congenial. Who can tell of a single quadruped, insect, bird, or annelid, which has been introduced by accident or unintentionally, and yet has established itself among us? It is a most exceptional thing! We admit that many things have to be considered. Who is to decide whether a plant or animal is indigenous or not? How can we tell by what means these representatives of plant or animal life came here? Has the whole fauna and flora been exhaustively treated?

These questions, and many like them, may be answered. The flora, for example, has been exhaustively worked, and the comparative botanist has little hesitation in saying of any plant, "This is a native, and that is foreign." A few are still ranked as uncertain, but that is in most instances because the plant is so akin in type and character to our indigenes, that it has all the appearance of being a child of the soil. Our birds and insects are pretty generally known, and the naturalist seldom finds it difficult to decide whether or not a capture is a native or a foreigner. And if our annelids are among our least known forms of animal life, the expert can in most cases tell whether a new form which comes under his notice is or is not a native. If there is at present any difficulty on this score it relates chiefly to a group of small annelids which feed on vegetables, bulbs, flowers, and different forms of plant life, and may be regarded regularly, or under certain conditions, as pests. If these worms are found among imported plants they may perhaps be generally looked upon as foreigners; but as it often happens that native annelids prove a scourge to introduced plants, the expert has to decide each case on its own merits. Much work yet remains to be done in this department of practical horticulture.

Our present study is intended to throw light upon a point which is not so critical. It has been

known for a long time that curious creatures often turn up in greenhouses, hothouses, and similar places where useful or ornamental plants are grown from foreign stocks. Especially is this the case where trees, shrubs, bulbs, and roots have been imported from America, Africa, or the East. Perhaps the earliest record of a foreign worm to which we can point relates to the curious *Perichæta*.

It is well known that no English earthworm has more than eight bristles on each ring, while the body in each instance is soft and pliable. But many years ago a worm of a rigid character was found in a greenhouse, which had bristles in the form of a ring or circle, surrounding every body segment. As time went on, and foreign worms began to be better known, it was found that the group to which this stranger belonged was quite typical of Eastern lands, where our own type was very seldom found. Then it became apparent that annelids, like other things, fell into classes and orders, and while one genus or family predominated in one district, another prevailed elsewhere. The *Perichæta*, or worms with circlets of bristles, now bewilder us with their multiplicity, and form perhaps the largest group of worms in the world. Yet, though we are yearly having consignments of foreign plants from the East and other lands, I do not believe the *Perichæta* has anywhere shown the least tendency to establish itself in England; though we cannot doubt that plenty of fertilised cocoons reach us continually to make such an event possible. The English conditions do not seem to be congenial. I have found specimens in, or received them from several different parts of England, including Kendal in Westmoreland; and Beddard says of *Perichæta indica*, Horst, that "this species is one of the commonest of the genus. It frequently occurs in hot-houses in Europe, having been there met with, in Scotland by Service, and by Michaelsen in Berlin." Dr. Baird, years ago, received the same or a near ally, from Wales and two localities in the eastern counties. Rosa has also received it from Portugal and Antananarivo, and says "it is frequently met with in botanical gardens." Another species (*P. sinensis*), which is a native of Foochow and other parts of China, has also been found in European gardens. We have no statistics to show whether they exist here for more than one season, but one thing is certain, that however frequently these worms may be imported, they have never yet found a permanent home amongst us.

On the other hand, we are now in a position to show that there are a few species of foreign worms, which have quite established themselves in our gardens. So far as our present knowledge goes, they are annelids which live in or near water, where the conditions are more favourable. Some years ago attention was drawn to the fact that a new worm had been found in the Regent's Park Gardens, London, concerning which the late James Payn had some humorous remarks.

Writing to the *Illustrated London News* of January 2, 1892, he says:—"That astute periodical *Nature* has discovered a new kind of creature in the tank of the Botanical Gardens. It is described as 'an advance on the Medusa,' which seems hard upon the Medusa, for it is but a worm. Its peculiarity consists in its having gills on its back, which is not usual in the fresh-water forms. A scientific correspondent suggests that 'it came originally from some river like the Amazon, and gradually accustomed itself to a change from salt-water to fresh.'" It is known as the *Branchiura*, or gill-tailed worm.

This curious and interesting worm was described by Beddard in the *Quarterly Journal of the Microscopical Society* for 1892, vol. xxxiii., p. 325; he having been the first to discover it in the London gardens. Like many other worms it can reproduce its tail. Beddard "cut off the entire gill-bearing region of a specimen, and in nine days there were four pairs of gills, not on the regenerated tail, which had only one small gill, but on the stump left behind, which was unprovided with gills

before amputation." In 1897 specimens were discovered in Kew Gardens, where they are now thoroughly established. They were kindly submitted to us first by Mr. Geo. Nicholson. It is a wonderfully interesting thing to watch the movements of this animal's tail as it obtrudes itself into the water (while the head is buried in the mud beneath), and waves rhythmically to and fro, at the same time keeping the water oxygenated, and its own body healthy.

It may here be mentioned that several small, microscopic water-worms have also been found at Kew and in London, which are undoubted importations, and have apparently become quite established. Eisen also informs us that several European worms have made themselves quite at home in America.

We have now to report one other worm which has become acclimatised in England, and bids fair to make a permanent addition to our annelid flora. Last year, a flying visit was paid to the Kew botanical gardens, for which the writer had been making some identifications, in the hope that he might be able by personal research to gain some new light. The season was very dry, and it was

blishes moreover the curious fact that it is undoubtedly to these Ferny glades of aeons ago that the present world of commerce, art, and science, owes, through coal, its chief and most rapid development; and from this we are entitled to assume that the very similar Fern-forests of the Antipodes are doing like work for the future, while in these days of appreciative humanity, affording the most delightful pictures of vegetative life in which the eye can revel.

Although the specimens are naturally fragmentary, and deprived by pressure of that grace which distinguishes the growing Fern-frond from the flattened out herbarium representative, there is abundant evidence of luxuriant growth and enormous size; the stems of the side divisions or pinnae being, in some cases, as thick as one's thumb, which, from the habit of the adherent pinnules, always planned on similar lines to the entire frond, indicate a length of frond of 40 feet or more—a giant indeed. Many of the smaller specimens are presumably fragments, and as there is no definite character which differentiates a detached pinna, or even minor sub-division from a frond proper, we are not surprised to find in the admirable

form the coal proper, which it has been demonstrated often consists mainly of the less destructible spores and spore-cases. The chance of a frond surviving in recognisable fossil form must be exceedingly remote, and collectors therefore are the more to be congratulated on their success in acquiring so much good material as to enable them to go a long way in classifying and identifying the very numerous species and genera of the Ferns of the Carboniferous age. It is abundantly evident that many of these shales are largely composed of or interstratified with the fronds of Ferns and Equiseta and their allies, and would probably expose fresh examples if repeatedly split up in the direction of their cleavage—a delicate and risky task in the case of good surface shows, but quite possibly well worth a trial in many instances. Chas. T. Drury, F.L.S., V.M.H.

STRAWBERRIES IN 1900.

I AM unable to describe the season as a good one. In the first place, the plants suffered severely from the protracted drought of last summer (1899), and the crowns were not so well developed as usual, but they passed through the winter unusually well; not 1 per cent. of our newly-planted beds failed, and they made a vigorous start in the spring. Soon after the flowering season the days were cold and wet, and although no blossoms were frosted, their operations were so checked, that the only satisfactory crop has been that of Royal Sovereign, the early berries of which were remarkably fine, and the pickings were good to the last, with but very few small and imperfect berries; a few rotted in the wet time at the end of June, but not a large number. Sir Joseph Paxton never gave a good picking all the season, and the late ones have not been up to their usual quality.

I am writing so far of our own stock. But so far as the market farmers are concerned, I have not seen a satisfactory sample in Maidstone this season; and in a chat with a very large and experienced grower, he remarked, "I never yet saw a good crop of Strawberries when the foliage stood up so bold before the fruit shows." In other words, the vital energy of the plants was diverted to the leaves, and thus starved the fruit.

As far as flavour is concerned, I retain my opinion that Dr. Hogg is the most delicious, while after that British Queen and Countess follow "a neck behind;" and Queen of Denmark, which I consider a great gain, comes next. That esteemed connoisseur, the Rev. W. Wilks, tells me, "Countess and Denmark are my best this year; the latter such a cropper!"

I am quite converted to tub-culture by the results I have seen, and for amateurs with small gardens. It is a boon to be enabled to grow thirty-six or forty plants in 6 feet square space, and the barrel plants are ten to fourteen days earlier than the same kinds grown outside.

NEW VARIETIES.

In new varieties there have been no remarkable sorts to mention, which I have "tasted and tried." Trafalgar should be good if it takes after its parents; while Lord Kitchener, if a bit acid, is a grand bearer, and if not quite up to dessert quality, will be valuable for preserving and ices.

At the present time I never saw the young plants more healthy and vigorous, and the old beds are the same. I would advise planters to increase their stocks of reliable sorts, trying a few of the newer kinds yearly. The Strawberry is such a fickle fruit, that a few sorts cannot be relied on to give a supply, and a variety may succeed grandly in one place, and utterly fail in another.

I could name six recent introductions that are quite worthless here, but they shall be tried for three years before discarding them. We have now many autumnal-fruiting varieties, and I believe there is a great future before St. Antoine de Padoue (see fig. 14). It is a very vigorous, compact grower, and the fruit is by



FIG. 14.—STRAWBERRY ST. ANTOINE DE PADOUÉ.

impossible to do anything in the open. At last, however, he found a sheet of water. It was very low from the drought, and the margins were muddy. Diving among the oozy mud, he soon brought up some specimens, which were instantly discovered to be new to Britain. The matter was duly notified to one of the officials, and has since been the subject of further research, the official report of which has yet to be prepared. We can only state that the worm is in some respects similar to our native earth-worms, having eight setae or bristles in each segment; but that it is, in all probability, a native of Brazil. We thus find a *Geoscolex* and a *Branchiura* settling down amongst us, and hope that further investigation may add other interesting forms. Rev. Hilderic Friend.

FOSSIL FERNS.

THE wonderfully interesting series of photographic reproductions of fossil Ferns found in the shales of various coal strata in the United States, given in the recent issue of the *Fossil Flora of the Lower Coal Measures of Missouri*, by David White, issued by the United States Geological Survey at Washington, bring before the mind's eye in almost as tangible a fashion as the fossils themselves the marvellous similarity of those Ferns of a distant past to our Ferns of the present day. It esta-

descriptive text a (?) usually inserted where the class of sub-division is given. Naturally, in looking through the plates we kept an eye open for signs of variation, and it is interesting to note that in one Fern (*Mariopteris sphenopteroides*), the excurrent rachides at the top of the frond and pinnae are almost precisely on the lines of several of our British varieties, such as *Scol. v. periferens*, *L. montana truncata*, *A. f.-f. excurrens*, and of a recent American find on the Potomac of *Polypodium hexagonopterum truncatum*, in all of which the divisions end somewhat abruptly, and the midrib continues as a thorn. In the fossil it appears to be a specific character, which points to the possibility of such sports being reversions to old ancestral types. In this connection, therefore, it might be well for possessors of other collections similar to the one in question to study them carefully from the varietal point of view. Another of the fossils, unfortunately very imperfect, seems to have distinctly ramose fronds, though none of the specimens show the bifid tips which so often occur now-a-days. The percentage, or rather permillage, however, of sports, or even partial sports, as compared with normal forms, is extremely small, and of course the number of fossil types fairly exposed by splitting of the shales containing them is relatively minute as compared with the mass of plants which grew, and died, and rotted completely away to

far the largest of the new hybrids. La Constante d'Automne (fecondée) will be the best of the St. Joseph race, and is a very finely flavoured berry in June, while it is a grand bearer in autumn, and the fruits are larger than St. Joseph. Of this "happy family," I fear we shall find many too closely related to retain as distinct sorts, but shall determine this in October. *George Bunyard, Maidstone.*

COLONIAL NOTES.

AUSTRALIAN IRRIGATION FARMS.

SOME irrigation experiments of an interesting and most remarkable character are at present being conducted in New South Wales. As is generally known, there is an immense inland region, used exclusively for pastoral purposes, embracing an area of several thousand square miles, and graphically described as a waterless country, the rainfall being slight, and the water supply extremely precarious. Yet it was not until within the last few years that it was definitely shown that abundance of water could be obtained, not only from the cretaceous formation, but also from other rocks underlying the soil in this part of the colony. Artesian boring in New South Wales commenced in 1879, in which year operations were begun at Kallara, a station lying between Bourke and Wilcannia. The supply was tapped at a depth of 140 ft., and the effluent water rose to a height of 26 feet. In 1884 the colonial Department of Mines put down its first bore in search of water, a small supply of which was reached at 89 feet. Since then much work has been done, both by the Government and by private enterprise. On November 30, 1899, there were seventy-three completed Government bores, while twelve were in progress, and contracts had been let for others. Of those completed, there are forty-eight flowing, yielding a supply of approximately 29,000,000 gallons per diem, and sixteen from which a supply of 750,000 gallons per diem can be pumped; but in the remaining eight bores the search for water suitable for drinking purposes has been unsuccessful. The deepest bore sunk in the colony is that at Dolgelly, on the road from Moree to Boggabilla, which is down 4,086 feet, yielding a flow of 745,200 gallons per diem. The next in depth is the Bancanya bore on the Silvertown-Cobham road, being 3,615 feet deep. The largest flow has been obtained at the Toolara bore, on the road from Wallgett to Coonamble, which yields approximately 3,000,000 gallons per diem. The water from the Government bores, over and above that required for travelling stock and domestic use, is being used for irrigation purposes, and much has already been accomplished in this direction. At the Pera bore, 8 miles from Bourke, on the Wanaaring Road, an area of 68½ acres has been reserved for an experimental farm. The remainder of the land has been cut up into 20-acre blocks, all of which have been let under the homestead selection provisions of the Crown Lands Act of 1895. Good results have attended the work of irrigation at this place, as well as at other bores, especially those on the Bourke to Barrington Road, but the work is still largely in the experimental stage. Should future results realise the anticipations formed by those who have carefully studied the question, it is possible that the vast expanse of treeless, waterless country, at present given up to sheep, and which is a source of heavy loss to pastoralists during prolonged periods of drought, may become studded with richly fertile spots, each an oasis in the wilderness, and assisting in changing the whole face of the country. The primary idea was to encourage the cultivation of drying fruits, such as Apricots and Raisins, but a couple of years were lost in experimenting with Californian methods of irrigation, which proved futile, the periodical flooding of the land causing it to cake down to the subsoil. The system of soil aëration now adopted has proved successful in every respect, and where, only a few years ago, there was nothing but dry, burnt-up country, may now be found beautiful

gardens, filled with the choicest flowers, growing in luxuriant profusion, and orchards filled with healthy trees giving the rich promise of future abundant crops. But there have been varying results on the irrigation farms. Several have been successful, and others only partially so. This, however, has been occasioned largely by the character of the tenants. Those possessing real agricultural experience, and willing to turn it to the best account, have found irrigation-farming a remunerative enterprise. Where such experience is lacking, there will inevitably be disappointment. Now that the principles on which irrigation-agriculture in the New South Wales dry country can be most effectually conducted are becoming better understood, it is probable that the number of irrigation farms will become considerably increased, and many million gallons of water at present unavoidably running to waste, become utilised in a most advantageous manner. *John Plummer, Sydney, N.S.W.*

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

The Early Vineries.—The planted-out Vines which are cleared of their crop of bunches, and are now making free growth, should be checked by degrees. If the principal leaves are still fresh-looking—as they ought to be on well-managed Vines—the sublateral may be removed, allowing one or two only to remain at the points of the shoots, to do away with the risk of the principal buds starting into growth. These "safety" shoots should be stopped at every fresh leaf made from now until growth ceases. To do this, allows the sun to fully mature the fruiting shoots. Should these be somewhat green for the time of year, the ventilators should be kept moderately open, and the hot water-pipes slightly warmed, which will promote evaporation night and day, and help in maturing the wood. Little damping-down will be required, but a good washing of the Vines once a week with the garden engine will be beneficial, and will keep down insect pests. Let the borders be kept in a moderately moist state at all times, so that the leaves may be kept healthy till a late period. It is far better to have to cut off the foliage at pruning time, provided the wood is matured, than to lose it prematurely.

Late Vineries.—The tropical heat demands much attention, in order to prevent the overheating of the air, and the consequent excessive evaporation of moisture, which exhausts the foliage before it is matured. The greatest danger to the foliage of late Vines occurs mostly during the stoning period, but that stage will now be passed, and should the foliage show signs of exhaustion from great sun-heat, some light shading material should be laid on the roof. During the continuance of the great heat, vineries should not be closed until late in the afternoon. A good damping down at about 8 P.M., and a little air left on all night will help to refresh the Vines. Much of the scorching of Vines is due to the foliage being trained too near the glass, combined with a sluggish root action brought about by a close retentive soil. On the other hand, where the soil of the borders is free and open, the danger lies in not affording sufficient water during very hot weather; as under the latter conditions the excessive heat permeates the border freely, and accelerates the manufacture of food at the root, much more rapidly in a well aerated border than in a close one. Advantage should be taken of this to supply a liberal amount of moisture, without which the process comes to a stand-still. Keep a close watch for the first appearance of red-spider, and sponge the foliage directly it is detected.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Ilchester, Abbotbury Castle, Dorsetshire.

Rock-garden.—Care and attention should now be given to this interesting part of the garden. When alpine plants are raised at home, seed-saving is an important operation that requires constant attention being paid to the seed-bearers, cutting out dead and decayed flower-stems and foliage, and applying stakes to the taller and choicer plants. Rapid-

spreading plants, which have a tendency to overrun their allotted space, should be restricted by neatly clipping or pinching back the shoots. The following are apt to do this, and it is a good method to pot-up rooted-pieces of these each year in rich sandy leaf-soil, viz.:—*Antennarias*, *Arenarias*, *Arabis*, *Artemisias*, *Cerastiums*, *Coronillas*, *Diotis*, *Erodiums*, *Dianthus*, *Helianthemums*, *Iberis*, *Linarias*, *Polygonum vacinifolium*, *Potentillas*, *Saponarias*, *Hypericum calycinum*, *Saxifragas*, mossy *Sedum*, *Sempervivums*, and creeping species of *Thymus*, &c. A stock of these plants is readily obtained by division of the roots, and as such they are useful for replacing old and disfigured patches during the autumn or early spring. In times of drought, the rock-garden should receive occasionally water after dusk, affording it as a very fine spray. The Patent Umbrella Sprayer is useful, but the force of water should not be so strong as to wash away the soil about the more delicate plants. This method of applying moisture permits of the easy extraction of all weeds, and allows of a light pricking up of the soil, previous to mulching it with leaf-mould, coarse grit, or ballast. *Sphagnum*-moss, if placed round about *Droseras*, *Sarracenias*, and *Orchises*, suits the plants if it can be kept in a growing condition. The spots where these plants are cultivated, should be drained so that moisture does not stagnate in the soil.

The propagation of Rock Plants.—A border or cool frame partially in the shade, should now be prepared as a propagating place. If the soil be stiff, remove it to the depth of 12 to 15 inches, and at the bottom place a layer of drainage materials, and then one of moss or coarse siftings from leaf, soil or loam, finishing with a compost consisting of one-third of yellow loam, finely sifted leaf-soil, grit, and charcoal, which, when made firm, should reach to within 4 inches of the top of the thin planks supporting the border or frame, and with sufficient fall to carry off moisture from the lights. If hand-lights are used, they should be kept clean. A good many of the creeping rock-plants, as *Saxifragas* and *Thymus*, may be taken as small tufts and planted with a small trowel 3 inches apart in the frame. Others as *Cytisus*, *Helianthemums*, *Cheiranthus*, *Fuchsias*, *Antirrhinums*, *Astragalus*, *Dianthus*, *Diotis*, *Erica australis*, *Globularias*, *Iberis*, *Lithospermums*, *Myosotis*, *Onosmas*, *Pentstemon*, *Phloxes*, *Plumbago*, *Larpenæ*, *Primula*, &c.; *Santolinas*, *Silenes*, *Veronicas*, *Aubrietias*, and *Campanulas*, &c., may be increased by cuttings of the side shoots taken with a heel, or the mother plants may be divided at the ground level, or by seed. The cuttings should be neatly made, and inserted carefully in the soil, and made firm. The seed should be sown in drills across the frame, and the soil well moistened with rain-water. If grub or worms get troublesome use lime-water, and pick them out as they come to the surface.

General Remarks.—A sharp outlook must be kept for earwigs; traps of Bean-stalk, Bamboo, or paper being inserted in likely places. Lawns will benefit now by being heavily watered, adding liquid-manure, or dressing with superphosphates.

Vitis Coignetiae, *V. amurensis*, *V. heterophylla variegata*, *V. humulifolia var. purpurea*, &c.—These are now making rapid growth, and after removing their laterals tie the Vine-stems to their supports. *V. Coignetiae* and *V. amurensis* grow to a considerable height, and should have plenty of space allowed them. If the soil or site be dry, apply a mulch of short stable-dung, and afterwards water liberally.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Dendrobiums.—The recent weather has been highly favourable to Orchids that require much solar heat, and more especially the warmth-loving species of *Dendrobium*. With abundance of natural heat and light, aided by atmospheric moisture and other artificially-created conditions, the members of the thyrsoid flowering group, such as *D. thyrsiflorum*, *D. densiflorum*, *D. fimbriatum*, &c., make rapid progress, and, providing sufficient ventilation be given, will mature strong pseudo-bulbs. Plants of those species immediately related to *D. thyrsiflorum*, when their pseudo-bulbs have completed their growth, should be removed to a drier atmosphere, so that secondary growths will not be induced. As the plants are still rooting freely, they will need ample supplies of water until the autumn, when they may be removed to a cool and

dry but light structure. The same treatment is required by a large number of Dendrobiums, such as *D. nobile*, *D. crassinode*, *D. Wardianum*, *D. primum*, *D. crepidatum*, and the various hybrids from those species. *D. aureum*, *D. Findlayanum*, *D. Dalhousieanum*, *D. fimbriatum*, and *D. moschatum*, should be kept in their growing quarters permanently, and those that are still making growth must be afforded copious supplies of water; but others that have commenced to mature will need less. Plants removed from the warm-house should not be subjected suddenly to direct draughts of air, or the tender foliage will "spot." Give an increased amount of ventilation as the plants become accustomed to their altered conditions. *D. Brymerianum* in the Cattleya-house rooting freely, needs much water. The leaves of most Dendrobiums are liable to attacks from insect-pests. Thrips and aphids may be kept under by fumigating frequently, but mildly. Red-spider is best treated by sponging the leaves with soapy water.

Stanhopeas are not popular Orchids, but lovers of curiously-constructed flowers will find plenty to interest them in these. Their cultivation is simple, and their needs few. They should be suspended in the Cattleya-house, the conditions of which suit most of the species. Plants in receptacles that have become decayed, may now be divided, and made up anew. Fix them in teak-wood baskets, by first placing a few rods of charcoal at the bottom, at right angles to the bars, and then work in some lumpy peat, inserting a few heads of sphagnum-moss on the surface. Very careful watering should follow such division, and thorough saturation of the sphagnum-moss should be avoided until the roots have well penetrated the new material. Water must not be permitted to remain very long in the young folded leaves, otherwise decay may set in. Owing to the flower-scapes generally growing downwards through the base of the basket, ordinary drainage should not be used. Undisturbed plants in a vigorous condition should be dipped frequently, and sprayed morning and afternoon to encourage free growth, and to prevent red-spider. When the pseudo-bulbs have matured, and root-action is decreasing, less water will be needed, and during the winter and spring months only when excessive shrivelling is apparent.

Laelia tenebrosa commences to grow almost immediately after flowering, but until root-action is free no increase in the supply of water is needed. This grand species requires a more constant supply of water than *L. purpurata*, and rather more shade, otherwise its requirements are the same.

THE KITCHEN GARDEN.

Y. A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

The Crops.—In a season like the present, when spells of hot weather have alternated with long periods of cool wet weather, it is a difficult matter to maintain all kinds of vegetables in a good condition. In some gardens these variations of weather do little or no harm, but it is otherwise on those having a gravelly subsoil. No plant is more easily affected by drought than Celery, and the plants which have received their first moulding should not be allowed to suffer lack of moisture, but moderate applications of water afforded in the evening. The main crop of Celery will be benefited by alternate applications of liquid-manure and clear water weekly. Manure-water should not come into contact with the foliage. Agricultural salt, bone-meal, and guano, sprinkled slightly on the soil between the plants before affording water, is especially helpful where liquid-manure is not available. The Celery-fly makes its appearance at about this date, and should be kept in check by weekly applications of soot, or by syringing the leaves with tobacco-water.

Scarlet Runner and other climbing Beans will have reached the limits of the sticks, and should have the points of the bine stopped, and mulchings applied before the plants come into bearing.

Shallots and Garlic—If the foliage shows that the roots are full grown, these should be lifted, and laid out thinly on the ground till they are dry. In northerly districts it may be advisable to allow the bulbs to remain in the ground for at the least a fortnight, as when lifted too soon they are apt to start into growth at an early date. Do not break up the clusters when lifting them, but dry just as

they are, and when dried divide and lay them out in a cool, airy store-room.

Parsley.—This herb may be easily obtained all the year round, if hand-light protection be afforded it in the winter. The last sowing should be made at the end of July, in a border that lays warm, and the soil of which is moderately rich. Let drills be drawn at 15 inches apart, and sow the seed thinly therein, and cover it with the finer particles of the soil, making it firm over the seed. The plants that are affording leaves for use should be watered plentifully, so as to induce continued growth of foliage. Parsley-seed, when matured, should be removed from the plants, and laid on paper in the sun to dry, and afterwards put in airtight bottles.

Lettuces and Endive for autumn and winter use now call for preparations on a liberal scale; and in order to have good heads of Lettuce throughout these seasons, it is better to afford frame-protection. Let two large sowings be made: the first forthwith, and another in about a fortnight later. The first will furnish salading to the end of October; and the plants from the second may be planted in cold pits for use in the winter. The first sowing should be made on an east or west border, and the later sowing on a south border. The ground must be in a good condition, and well pulverised. After levelling and rolling it, drills should be drawn at 1 foot apart, and the seed sown thinly therein. In dry weather water should be applied abundantly, or the growth will be slow. As soon as a piece of land on a south border becomes vacant, it should be got in readiness for transplanting these, dressing it heavily with rich manure, to which some soot and wood-ashes are added. The best Cos Lettuces are Hick's Hardy Green, and Sutton's Intermediate; and the best Cabbage varieties are Lee's Immense, Hammersmith Hardy Green, Stanstead Park, and Victoria.

Miscellaneous.—All seed-beds should be kept very moist, and to Cauliflowers occupying ground between taller vegetables, water should be copiously applied. The winter vegetables should be examined, and blind or weakly plants replaced by sound ones drawn from the seed or nurse-beds. Where late sowings of Cauliflowers and Cabbages, &c., were made, these should be planted in preference to larger plants that may have been left in earlier seed-beds.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

Chrysanthemums.—Cuttings of varieties put in as advised, being now well rooted, may be removed from the warm-bed, and stood in a cold pit, with their tops close to the glass, and be gradually exposed to full sunlight. Let the young plants be freely syringed, and the points pinched out; and when the plants begin to move, shift them into 6-inch pots. Return to the cold-pit, shade, and keep rather close for a week, then plunge them in coal ashes outside, at about a foot apart. When the roots reach the sides of the pots, apply liquid-manure. With proper attention, these will make dwarf bushy plants, whose foliage will descend to the rims of the pots.

Euphorbia pulcherrima.—The earlier-struck plants should now be shifted before they become at all pot-bound, using 7 or 8-inch pots and good turfy-loam, a considerable quantity of silver sand, and a 32-size pot full of bone-meal to each bushel of soil. No water should be afforded for a few days, but the plants should be shaded carefully and sprayed frequently; then let the quantity of shading be reduced, and give air by degrees, till the plants will stand the full sunshine without flagging.

Schizanthus retusus, *S. r. albus*, and *S. Grahami*.—Seeds of this plant in variety may now be sown in pans or boxes, and again early in the month of September. The first batch will flower in the early spring. When the seedlings are large enough to be handled readily, prick them off into 32's to the number of nine in a pot. The soil for the Schizanthuses should be rich and light. A greenhouse pit is the best place in which to winter them. The plants are of easy culture, not liable to be infested by insects, and they make a fine display in the conservatory for a considerable period of time. In the cut state the flowers are useful for filling glasses, the stems being cut from 2 to 3 feet in height.

Bulbs.—The earliest Roman Hyacinths, and Narcissus Pearl and Double Roman, should be potted as soon as the bulbs can be procured from the seedsmen. For Roman Hyacinths, large 48's are the most convenient size of pot; and for Narcissus, small or large 32's. Let as many bulbs as possible be placed in each; afterwards plunging the pots in coal-ashes or cocoanut-fibre refuse, covering them with a layer of the same 5 inches thick. The longer the bulbs are potted before being required in flower, the better will be the flowers.

Lachenalias may be shaken out and repotted in similar compost to that used for Freesias; but if these were potted last year, let the pots be immersed in water, and afterwards top-dress the soil with cow-dung. Some of the finest *L. pendula* I ever saw had not been repotted for several years, but after flowering had been stood on a greenhouse shelf, thoroughly ripened, and treated as above described.

Miscellaneous.—During the hot weather let the syringe be used freely among *Celosias*, *Linums*, and winter-flowering plants generally, and afford regular supplies of manure-water; and finish off the repotting of such plants if not already done.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

The Work of the Week.—The drought which has prevailed over a great portion of the country has occasioned an immense amount of labour being expended in affording water to stone-fruit trees on walls; and should it continue, Apples and Pears on walls will claim the same kind of attention, and on dry soils water will have to be afforded to trees in the quarters. The operation to be of any benefit to the trees must be thorough, dribbles being worse than useless. When water is applied in this manner, the needs of each tree will be met for some two or three weeks. Strawberry-plants, if rain do not fall ere long, will require water in abundance, otherwise the foliage will soon fall a prey to red-spider. Runners layered in pots will require much water, as on no account should the soil be allowed to get dry. The syringing of the wall trees is of more importance now than was the case a few weeks ago, and should be carried out either late in the afternoon or early in the morning. Late Gooseberries and Raspberries on trellises will be greatly benefited by a plentiful application of diluted liquid-manure. Raspberries may have repeated applications if the staple be poor. As soon as the summer fruiting Raspberries cease to bear, the old canes should be removed at a point close to the ground, and the current year's canes thinned out to six or eight to a stool. Manure-water will act very beneficially on these plants. Let the summer pruning of fruit bushes receive due attention, and the young shoots on wall-trees recently laid in be fastened back as much as may be necessary.

THE APIARY.

By EXPERT.

Foul Brood.—There are bad reports coming in from many districts as to this pest being on the increase; a rigid watch should be kept, and means taken to stamp it out. If the bee-master is not quite clear as to what is the matter, he should consult an expert forthwith, it being worse than useless to allow the matter to go on, day after day getting worse.

Purchasing Bees.—In districts where foul brood is known to exist, and even if it does not, a guarantee of health from the seller should be obtained. Many persons, I fear, do sell to anyone who may chance to come along, and thus get rid of stocks, well knowing they are not in a fit state for sale. The wax-moth is also very troublesome this year, but a little naphthaline kept in the hives will keep this pest away.

FALKLAND PARK.—In our notice of this garden in our number for July 14 last, we omitted to state that the construction of the fine ranges in that establishment was carried out most efficiently by Messrs. MACKENZIE & MONCUR.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the **EDITOR, 41, Wellington Street, Covent Garden, London.** Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 31 { Royal Horticultural Society's Committees, Meeting.

WEDNESDAY, AUG. 1 { Midland Carnation and Picotee Show at Birmingham (two days).

FRIDAY, AUG. 3 { Devon and Exeter Hort. Soc. Show.

SALES.

FRIDAY, JULY 27.—Imported and Established Orchids, at Frotheroe & Morris' Rooms.

WEDNESDAY, AUG. 1.—Sale of Freehold Nursery, Hampton, 2½ acres, at the Mart, London, at 2 o'clock, by Frotheroe & Morris.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—63°4'.

ACTUAL TEMPERATURES:—

LONDON.—July 25 (6 P.M.): Max. 92°; Min. 60°.

July 26: Fine, hot.

PROVINCES.—July 25 (6 P.M.): Max. 86°, Home Counties; Min., 55°, N.E. Scotland.

The Sweet Pea
Bi-Centenary
Celebration.

THE bi-centenary of the introduction of the Sweet Pea into Britain was duly celebrated at the Crystal Palace on July 20 and 21. It would appear that the Committee endeavoured to obtain a two-fold result: the first, and possibly the more important, being to classify the varieties so far as possible, with a view to making a select list, and excluding therefrom all those that are "too much alike" to others, and the inferior ones.

The above object seems first to have been in the minds of the originators of the scheme, and it was encouraged by the knowledge that in the United States of America, such attention had already been given to the Sweet Pea, and that it had become in that country a popular exhibition flower. As a means of effecting the object stated, it was decided to organise a large exhibition of the flower during the present year, which happens to be the two hundredth anniversary of its introduction to Britain.

It is possible, therefore, there would have been held an exhibition this year, though it had nothing whatever to do with marking a bi-centenary, and there is every probability that for a time at least there will be shows of the Sweet Pea each year. At any rate, this would seem to be the logical outcome of the proposal already made, that there shall be instituted a permanent Classification Committee to examine new varieties from year to year. If this idea be adopted, there will be a Sweet Pea Society, and slight differences between varieties will be accentuated, just as is now the case in respect to Roses, Carnations, Chrysanthemums, and Orchids.

Sweet Pea enthusiasts are pleased with the prospect. They say it is in sympathy with the spirit of the times, which is more and more towards specialism. The greatest degree of perfection is developed where specialism is adopted in its entirety. But it may well be

asked will it be possible to "specialise" in respect to all the more beautiful and fragrant flowers? Is it not a fact that there is only a certain amount of energy and resource in the horticultural world, and when increased attention has been given to a plant or a class of plants, has not some other plant or plants lost in some degree the benefits it obtained from the extra notice previously enjoyed? We think this is the case, and if it be so, it is proof that there cannot be "specialised" cultivation and systematic arrangement maintained in respect to every flower that has equal claims to some of those that now rank as exhibition flowers, such for instance as the Auricula. If there is any need for the systematic arrangement of varieties of the Sweet Pea, it is the trade rather than private cultivators of the plant that have felt it. There are more than 250 varieties at present found in seed-lists, and a customer may write an order for any one of these, and he expects his seedsman to supply it, which means that the nurserymen must cultivate an extreme number, including many that he knows to be of little comparative value. A nurseryman remarked to us at the Palace the other day: "Why should we have to cultivate five times as many varieties as there are good ones, for I am convinced that I could form a collection of fifty that would embrace all the variations there are in colour and form." The trade therefore think that if a classification committee, or to put it plainly, a Sweet Pea Society be established, and an authoritative list of varieties be recommended, they would be able to shelter themselves behind this when applied to for comparatively worthless varieties, and the trade was therefore much interested in the exhibition.

But to consider the exhibition itself. The committee certainly succeeded in bringing together an immense number of flowers. The arrangements were in many respects faulty, as we shall see presently, but as an exhibition it was decidedly successful.

Take, for instance, the first class, and it was likewise the largest also. In this, Messrs. SUTTON & SONS, Reading, offered very liberal prizes for one hundred bunches of Sweet Peas, arranged in the colours, dark blue, sky blue, rich purple, blue and purple striped, brilliant scarlet, carmine and white, pink and rose, scarlet striped, primrose-yellow and white. There were seven entries, and therefore this class would bring 700 bunches. The success of this competition was reflected in more or less degree through the whole exhibition. The 1st prize was won by the Duke of SUTHERLAND, Trentham, Staffordshire (gr., Mr. P. BLAIR); the vases in this case being placed upon green paper, and the Pea-flowers relieved by sprays of Gypsophila, which were arranged below rather than among the Peas. It is needless for us to remark that the flowers were very fine, but it was interesting to examine the varieties that could safely be grouped under the names chosen by Messrs. SUTTON. From several standpoints the class was not satisfactory, because it would be exceedingly difficult to show Peas of all the colours required. There is no "brilliant scarlet," for instance, and the variety that answered best to this description was the American Gorgeous, which may be said to have an orange-scarlet standard; Oriental is less so; and Salopian is rather crimson. Any one who has grown many Sweet Peas, has found that known varieties vary considerably, and the Gorgeous just mentioned affords a fine illustration of this, for flowers in various collections at

this exhibition differed much. It is one of the brightest-coloured Sweet Peas, but the standard is apt to burn in hot sunshine; and it is said that, if a little shade be given the flowers, they colour best.

We saw no specimens in the show so good as Mr. BLAIR's, but we do not know whether they had been shaded or not. Trentham, however, is a much cooler district than any near London. In "white," there was the new Sadie Burpee, also Sensation, and Duchess of Sutherland. The two latter varieties are slightly tinted ones. Under "sky-blue" was the beautiful Lady Grisel Hamilton, of lavender shade; and among "primrose-yellows," Queen Victoria, Venus, and Mrs. Eckford. The "rich purples" varied much in shade; Duke of Westminster answered to the description best, but there were also Othello, Black Knight, and Duke of Sutherland. The "dark blues" included shades that by comparison were not dark. The 2nd prize was taken by H. HAMMOND SPENCER, Esq., Glendaragh, Teignmouth (gr., Mr. G. FOSTER); and the 3rd by A. S. HAYMAN, Esq., Hapford House, Frome (gr., Mr. F. ACKLAND).

The arrangement of the flowers by different exhibitors did not vary in method, but some were staged in better taste than others. In some of the collections the mistake was made of using too much relief material, as Gypsophila, natural grasses, &c., and of associating them confusingly amongst the Pea flowers. But the general appearance of the exhibition suffered less at the hands of exhibitors themselves, than from circumstances that we suppose might have been prevented by the Show Committee. The most "regrettable incident" was that of the scarlet drapery which was suspended from the tables to the floor. Try as one would, there was no getting away from this terrible mistake. You could examine the Pea-flowers upon a certain table without their colours being killed by the drapery of the same table, that is if you placed yourself sufficiently close to the table; but, if you were standing in the centre pathway, the flowers had still for a back-ground the scarlet screen at the front of the side table. So killing was this drapery to the delicate tints of the Peas, and so utterly displeasing, that it would be impossible to remark upon this show and not mention a feature that made so lasting an impression. In another respect an improvement might have been made, by placing a few ornamental plants along the centre of the tables, which would have given the show a much better effect. In the disposition of the exhibits in the various classes too, there was much to be desired, for several tables in the best positions were left unfurnished, whilst many of the exhibits were crowded to the sides of the Palace, and to corners we have seldom seen pressed into service. But it would be idle to expect the first great Sweet Pea Show held this side of the Atlantic to attain perfection in such details.

In Mr. ECKFORD's class for forty-eight bunches, in not fewer than thirty-six varieties, were shown what were generally admitted to have been the best examples of flowers in the exhibition. These gained the 1st prize for Lord ALDENHAM, Aldenham House, Elstree, gr., Mr. ED. BECKETT, and were also awarded Messrs. J. CARTER & Co.'s Silver Cup, offered for the best exhibit in the show. PERCY WATERER, Esq., The Briars, Fawkham, Kent, who provided a background of black velvet, and placed the vases over very pale green, took 2nd prize; the Duke of SUTHERLAND being

next best among five other exhibitors. Messrs. HURST & SON offered prizes for thirty-six bunches in twenty-four varieties, and a fine show resulted. The trade were not excluded, and so the 1st prize was won by Mr. ROBERT BOLTON; and the 2nd by Messrs. I. HOUSE & SON, Westbury-on-Trym; Messrs. HINTON BROS., Warwick, being 3rd.

The next class for prizes by Messrs. COOPER, TABER & Co., was interesting from the standpoint of colour. The collection adjudged to be best was from Messrs. I. HOUSE & SON. There was to be one bunch each of the three best white, three best scarlet, and three best blue varieties. In the winning stand the scarlets were Gorgeous, Mars and Salopian; Blues, Lady Grisel Hamilton, Countess Cadogan, and Navy Blue; and Whites, Sadie Burpee, Blanche Burpee, and Snowdrift. PERCY WATERER, Esq., was 2nd, but there was a protest raised from another exhibitor owing to there having been two schedules issued, which in respect to this class were not absolutely the same, and the prizes may have been re-adjusted.

Messrs. WEBB & SONS' prizes brought together some nice exhibits of twenty-four bunches, the best of which came from Leicester, the exhibitor being MARK FIRTH, Esq., Weston Hall, gr., Mr. F. J. CLARK.

Messrs. BURPEE's class for cut blooms of American-raised varieties was very successful, but those for plants of Cupid varieties call for no remark. There have been some very lovely varieties introduced from America, such as Navy Blue, Oriental, Grey Friars, Lottie Hutchins, Gorgeous, and many others. Lord ALDENHAM had the best collection of these.

The class in which prizes were offered by the proprietors of the *Gardeners' Magazine* for eighteen bunches was won by Messrs. ISAAC HOUSE & SON; and in a class for eighteen stems, which showed the greatest aggregate of expanded blossoms, and for which prizes were offered by M. ERNST BENARY, of Erfurt; most of the stems had four or five flowers upon each.

A number of classes were arranged for single bunches of varieties of particular colours, with a view to showing the best of each colour; the prizes being offered by various seed firms. The results of these classes were as follows: dark maroon, bronze or purple, Black Knight; pink, Lovely; rose, Lord Kenyon; scarlet or crimson, Salopian; a "hooded" standard variety, Countess of Lathom, pink; a deep blue or violet variety, Duke of Westminster; yellow or primrose-coloured, Queen Victoria; pale blue, mauve, or lavender, Lady G. Hamilton; any white variety, Sadie Burpee; bluish, or flesh-coloured, Venus; dark striped or flaked variety, America; a light striped or flaked variety, Pink Friar.

In the classes for amateurs, the principal one, for eighteen bunches, was won by THOS. ALDERSEY, Esq., The Hermitage, Shrewsbury, with a collection in which there was one American variety, and the rest were raised in England. There were also classes for twelve bunches and six bunches.

In the floral decorations there was not any novel feature that specially calls for comment, as Sweet Peas have been arranged in similar fashion at exhibitions previously. A prize was won by Messrs. JONES & SON, Shrewsbury, for the best decorative display covering a table; and Miss C. B. COLE, Feltham, had the best decorated dinner-table.

Non-competitive exhibits of Sweet Peas were shown by a number of firms, including the

following: Mr. H. J. JONES, Ryecroft Nursery, Hither Green, Lewisham (Gold Medal); Messrs. H. CANNELL & SONS, Swanley (Gold Medal); HURST & SONS, Houndsditch (Gold Medal); E. W. KING & Co., Coggeshall, Essex; ROBERT SYDENHAM, Birmingham; HARRISON & SON, Leicester; DICKSONS, Ltd., Chester; J. PEED & SONS, Norwood; WEBB & SON, Stourbridge; DOBBIE & Co., Rothsay (Gold Medal); J. CARTER & Co., High Holborn; F. G. FOSTER, Havant; FIDLER & SONS, Reading; Mr. H. ECKFORD, Wem, Salop (Gold Medal), &c.

Golden Gate was a new variety that obtained 1st prize in a class for novelties. In Mr. ECKFORD's non-competitive exhibit the following were new varieties: Miss Willmot, a large, fully expanding variety of attractive rose colour; Hon. Mrs. E. Kenyon, pale yellow, and an improvement upon Mrs. Eckford; Jeannie Gordon, a variety with cream-coloured wings veined with carmine; and a deep rose standard, Coccinea, and George Gordon.

A luncheon at midday on Friday was presided over by Alderman and Sheriff Sir W. P. TRELOAR, President of the celebration. The principal toasts included "Success to the Bicentenary Celebration," which was responded to by Mr. GEO. GORDON, V.M.H., Chairman of the Committee; and "The Foreign Guests and Visitors," to which responses were made by the Rev. W. T. HUTCHINS, Philadelphia; and Herr FRITZ BENARY, Erfurt. The Rev. Mr. HUTCHINS said that for the past ten years there had been in America a wave of interest in the Sweet Pea three thousand miles long, but that there had not yet been held such a good exhibition as was to be seen at the Palace. Mr. N. SHERWOOD, V.M.H., proposed "The Officers and Committees of the Celebration," and Mr. R. DEAN, Secretary and Treasurer, responded.

The conference commenced at four o'clock on Friday, but the heat was so intense, that difficulty was experienced in getting together a satisfactory audience. Only two subjects were discussed, instead of three as arranged. These were "The History of the Sweet Pea," by Mr. S. B. DICKS, and "The Classification of Varieties of the Sweet Pea," by Mr. W. P. WRIGHT. In the latter paper it was suggested that the varieties might be grouped into self-coloured, bi-coloured, flaked, Picotee-edged, and fancy varieties; but it was undesirable to attempt any classification in respect to form, the "hooded" character being one undeserving of encouragement. There were several subjects remaining to be discussed on Saturday, including "Some Points on the Culture and Decorative Uses of the Sweet Pea," by Mr. H. DUNKIN; "The Evolution and Improvement of the Sweet Pea," by Messrs. ECKFORD and CURTIS; "The Sweet Pea in America," by the Rev. W. T. HUTCHINS. The Classification Committee were engaged for some time upon the task of systematising these, but we do not know in what form the committee will publish the result, or whether the papers will be published in a pamphlet.

Carnation
Disease.

STIGMONOSE is the name given by Mr. ALBERT F. WOODS to a disease, which is not uncommon

on this side as well as on the other side of the Atlantic. It forms the subject of a descriptive pamphlet, published under the auspices of the Department of Agriculture, by Mr. ALBERT F. WOODS. To show the way in which the United States Government looks on this matter, we may cite from the chief of the division of Vegetable Physiology and Pathology: "The

Carnation crop in this country (U.S.A.) represents an annual value of over \$4,000,000, and is constantly increasing." We fear that no amount of dollars would induce our government to appoint plant-doctors for the benefit of the horticulturists, amateur or commercial. The disease which Mr. Woods calls Stigmonose, is the same as that which was originally called bacteriosis, under the notion that the disease was due to bacteria. Mr. Woods, however, shows that it is due to the puncture of insects, and especially of aphides, and the photomicrographs that he appends to his paper show clearly the actual puncture, and the results on the structure.

The leaves when held up to the light are seen to have small pellucid yellow dots. The leaves were not only examined microscopically, but the tissue of the spots was "cultivated" in the ways now familiar to students of fungi and of bacteria. Five hundred of such cultivations were made, but without result. Nor were inoculation experiments with bacteria more successful. The changes of the tissues were, however, found to be like those caused by thrips, red-spider, or aphids. Plants will out-grow the disease if well cultivated and kept free from thrip, aphids, and red-spider. The author concludes that "the grower can successfully combat this disease by the proper selection of cuttings, careful propagation of stock, good soil, the proper amount of moisture, light, and air, and by the reduction of aphides, thrips, and red-spider to a minimum."

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees of the Royal Horticultural Society will take place on Tuesday, July 31, in the Drill Hall, James Street, Westminster, when special prizes will be offered for Cacti. A lecture on Cherries and Plums will be given by Mr. H. SOMERS RIVERS, at 3 o'clock.

THE MIDLAND CARNATION AND PICOTEE SOCIETY.—Owing to the very hot weather of the last few days, it has been thought desirable to again alter the date of our coming Carnation Show. This is now definitely arranged for the original dates, viz., August 1 and 2. Robert Sydenham.

THE FENN TRIBUTE FUND.—In addition to the names mentioned in our last issue, we may cite that of Mr. T. TURTON. We shall be happy to receive and transmit all sums received.

FLOWERS IN SEASON.—Mr. BAYLOR HARTLAND kindly sends specimens of Goat's Rue (*Galega officinalis*), and of a variety which is handsomer, taller, more robust, with narrower leaves, and longer flower-spikes, with a larger number of flowers, each flower somewhat larger than the type, and the upper flowers of the raceme almost all white. It is evidently an improved variety, and some people would think the differences sufficient to constitute a species.

THE PROPOSED LABORATORY AT KEW, if placed in the situation proposed, will obstruct the view over the Deer Park, and interfere with the amenity of the Queen's Cottage and its surroundings in Kew Gardens. There is no such view near London, and there are plenty of places where the laboratory could be placed in secluded situations without interfering with the public rights.

CANADIAN TENDER FRUITS.—We recently noted the possibility of the withdrawal of these fruits from our markets, owing to lack of arrangement between shippers and shipowners. That the trade could be made profitable all-round, may be gathered from the following. During last autumn, there were sent from Grimsby, Canada, to this country, in cold storage, for experiment, 127 cases of Peaches, 3,746 cases of Pears, 1,456 cases of Apples

82 cases of Quinces. Of the Peaches, one lot of 28 cases, sold at 2'46 dols. each; another of 30 cases sold at 2'99 dol.—good prices for about half a bushel of fruit. Pears did well in all cases where they are raised in good condition. In one instance, 145 cases of Bartlett's, less than half a bushel each, were sold in Manchester for 1'97 dol. each, and netted in Grimsby at 1'54 dol. per case. Another successful instance was a shipment of 242 cases of Duchess Pears, which were sold at 1'97 dol. in London, and netted 1'40 dol. in Grimsby.

THE YORKSHIRE COLLEGE AGRICULTURAL COUNCIL.—The Yorkshire College, Leeds, and the East and West Ridings Joint Agricultural Council have issued, in bulletin form, pamphlets No. 11 on "The Food of Wild Birds," and No. 12 on "One Hundred Yorkshire Weeds." The former of these papers constitutes one more attempt to teach agriculturists and others which birds are beneficial and which prejudicial to crops; while the other *Bulletin*, by Dr. W. G. SMITH, Lecturer on Agricultural Botany, is a classified list of weeds injurious on plantations. Many weeds universal throughout Britain are included, and the list is intended chiefly for use in the East and West Ridings of Yorkshire. "In this wide area, with its varied types of farming on different classes of soils, the number of plants occurring as weeds is greater than one hundred, but it was considered advisable to fix on some definite number, and to complete herbarium collections necessary to illustrate these before proceeding further." Such a pamphlet as this must be of great value to agriculturists willing to make use of it, and it is satisfactory to hear that a list of a second hundred weeds will be formed after the details of the first hundred are complete. It would be well to add notes on the particular way in which the plants are injurious, as that information would furnish the clue to the remedial measures to be taken.

FLORISTS AND THE WAR.—A daily contemporary says that the decorating florists had suffered considerably through the war. A well-known London florist informed a representative that in July of last year, he had twenty-seven balls on his books, but this year he had only booked one. The war represented a loss to him of about £7,000.

LILIES.—Mr. G. F. WILSON, V.M.H., writes, "I was unable to be present at Mr. WALLACE'S lecture on Tuesday. In your report, p. 58, you say that reference was made "to the practice of growing Lilies planted out in unheated glasshouses, as adopted by Mr. G. F. WILSON, of Weybridge." I have grown a great many Lilies of many species in pots and boxes in unheated and slightly-heated glasshouses, and a great many in the open border unprotected, and in Rhododendron beds, and in casks with the bottoms taken out, so as to protect the bulbs from the roots of shrubby plants; but I have never planted out Lilies in unheated or heated glasshouses. As I am writing, will you allow me to say that I grew and exhibited many Lilies long before Mr. ELWES took up their cultivation, and wrote his monograph; and many years before Dr. WALLACE, the lecturer's father, began growing them, and wrote his book. Some amateurs grow Lilies easily, others with difficulty; much depends on the particular garden. We have at present a good instance of this: in one wood where we have many Lilies planted out, a certain number where unprotected suffer from hard May frosts; in another wood only 5 miles from the first one, we have never to consider frosts at all. I enclose an old paper showing a Certificate as far back as 1867."

SWEET PEAS.—It is singular that a flower apparently so adapted to insect fertilisation rarely intercrosses (see DARWIN'S *Variation of Animals and Plants*, vol. ii., 1868, p. 91). The late Mr. MASTERS, of Canterbury, who paid great attention to these plants, and catalogued five or six varieties in his *Hortus Duroverni* (1831), considered the white variety to be the truest from seed. DARWIN

himself fertilised on two occasions a purple variety with pollen of the Painted Lady, which has a pale cherry-coloured standard, and white wings. From seeds in the same pod he raised plants perfectly resembling the two parents (see DARWIN, l.c., p. 94). He raised three or four generations of these, and they continued to resemble Painted Lady; but though they were occasionally blotched, they never reverted completely to the original mother parent.

BRITISH ASSOCIATION.—The next meeting will be held at Bradford on Wednesday, September 5, till the following Wednesday, under the Presidency of Sir W. TURNER, M.B. The Botanical Section—Section K—will be presided over by Professor VINES with Professor REYNOLDS GREEN, and Sir GEORGE KING as Vice-President; and Messrs. A. C. SEWARD, HAROLD WAGER, and W. WEST, as Secretaries.

OLD BOOKS.—One of the most widely known men among botanists, gardeners, and men of science generally in the north of England, and the south-eastern counties of Scotland, was the late Dr. JAMES HARDY, for long tenant of the farm of Old Cambus, East Lothian. Many of those who knew him will be interested to know that the library of old and new books, which he had collected during a very long life-time, has been lately dispersed; not a few had been in his possession for forty to sixty years. Among the old English works on subjects connected with gardening and botany, were the 1574 and 1586 editions of Lyte's *Nieuwe Herball*, Langham's *Garden of Health*, 1579; a very fine copy of Parkinson's *Paradisus*, which belonged to Martyn, and the *Theatrum Botanicum*, in equally good condition. Holland's *Pliny*; the 1636 edition of Gerard's *Herball*, Platte's *Jewell House of Arte and Nature*, and *Garden of Eden*, Barnaby Googe's *Husbandry*, Berth's earliest work, *The English Improver*, and Hartlib's *Legacy*, are other classics. There was also a copy of *The Countryman's Recreation*, generally described as an anonymous book, though referred erroneously by Miss Amherst to Markham. As a fact the book is a reprint of Leonard Mascall's *A Book of the Arte and Manner howe to Plant and Graffe all Sortes of Trees*, &c. (1572); to which is added *A Perfect Platforme of a Hoppe Garden* and *The Expert Gardiner*; the last named a compilation from various early works, including Hill's *Arte of Gardening*. The illustrations are from Mascall's book, with plans of knots and parterres from *The COUNTRY FARMER*. A curious misprint of "Water-cresses" for "water-crevisses" occurs, and apart from the engravings, the work is of no value. Markham, Worlidge, Tull, Miller, and Evelyn, were also represented by one or other of their works. A very interesting but not much known book is Lovell's *Herball* (1665), with the plants arranged in alphabetical order. Among books of foreign production were several curious and fine works, and none more so than a German one of date 1562, giving the *Effigies of Plants, Trees, Fruits, Animals, Reptiles, Insects*, &c., all coloured, and having as frontispiece a garden in colours with the gardener at work among his flowers. Several works of Fuchs, including a beautiful French translation (1549); Delachamp's *Histoire des Plantes*, 1653; and Boccone's *Observationes Naturales*, were in fine condition. Dioscorides was represented in no less than four editions, one being in Spanish; and Clusius in several of his books. Other fine works included Lobel's *Stirpium* and *Adversaria*, Paull's *Quadripartitum Botanicum*, Haller's *Stirpium Helvetice*, and a very fine copy of *Hortus Cliffortianus*. Camerarius, Crescentius, Bauhin, Cordus, Linnaeus, Willdenow, and other old writers were also well represented.

PUBLICATIONS RECEIVED.—*Agricultural Gazette of New South Wales*. The June issue of this periodical contains, among other articles, contributions relating to the Water Hyacinth, by W. Froggatt; Insects living in Figs (with some account of Capricitation), also by Mr. Froggatt; The California Fruit Industry, Composition of Rape, Peach-leaf

Curl, Rust on Celery, Analysis of *Paspalum stoloniferum* grass suitable for coastal districts), and Orchard Notes.—*Bulletin de l'Association pour la Protection des Plantes*. The eighteenth number of this periodical (published by W. Kündig et Fils, 4, Vieux Collège, Geneva), includes illustrated articles on Yews and Cedars of Lebanon, and Rock Gardens. The pictures of the Chemin de la Garance, l'Avenue de l'Hermilage, and La Jonction in 1897, are exceedingly pleasing. We need hardly remind our readers of the connection between the "Association" and our contributor, M. H. Correvon.—We have before us the *Bulletin of Miscellaneous Information*, Appendix IV., 1900, from the Royal Gardens, Kew, and which is devoted to a list of staffs in botanical departments at home, and in India and the Colonies. We note also the *Bulletin of the Botanical Department, Jamaica*, edited by W. Fawcett, and containing papers on Rice Culture in the United States, Potato Scab, Vanilla (with an illustration of the fertilisation of the flower), and Salt Bushes.—*Transactions of the Massachusetts Horticultural Society*. Part II. of this publication for 1899 contains the Report of the Committee on Plants for 1899, by W. W. Lunt, chairman; accompanied by illustrations of Cattleya × Hardyana, Dipladenia Boliviensis, and Lælia × nigrescens—noteworthy plants of the year. Other reports deal with Flowers, Fruits, Vegetables, Gardens and Native Plants, Forestry and Roadside Improvement, and other branches of the work connected with the Society.

DICKSONIA YOUNGII IN THE BUSH, QUEENSLAND.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE genera of Ferns which contain species with erect woody stems are Alsophila, Cyathea, Dicksonia, Hemitelia, Lomaria, Brainea, and Blechnum. Although popularly known as Tree-Ferns, many of them are quite dwarf in habit, and are no more tree-like than a tree Carnation. Such are Lomaria, Brainea, and Blechnum. Hemitelia contains a considerable number of tall-stemmed handsome species, but the genus is not generally known, the three first-named genera supplying the garden representatives of arborescent Tree-Ferns. Alsophila is chiefly tropical, and comprises about a hundred species, twenty of which are in cultivation at Kew. Only one, however, is what is known as a garden plant, namely, *A. australis*, a native of Tasmania, Australia, &c., and a good plant for the conservatory. Cyathea is another large genus, essentially tropical, and represented in gardens by two species which are not tropical, namely, *C. dealbata* and *C. medullaris*, both natives of New Zealand; and another which is tropical, viz., *C. insignis* (princeps), a western plant, that may be grown in a cool-house.

Dicksonia is among Ferns what Latania is among Palms, or Cycas among Cycads. Show the man in the street a Tree-Fern, and if he pretends to know the plant at all he will call it a Dicksonia. Among everyday garden plants he would probably be right. There is no more serviceable Fern than Dicksonia antarctica, from East Australia and Van Dieman's Land. Although known as the New Zealand Tree-Fern, it is not a native of that country. It appears to be abundant in New South Wales and Victoria. The late Baron von Mueller said that it was "not only one of the tallest of all the Tree-Ferns of the globe, but certainly also the most hardy, and the one which best of all endures a transit through great distances. Indeed, a fresh frondless stem, even if weighing half-a-ton, requires only to be placed without any packing in the hold of a vessel as ordinary goods, to secure its safe arrival in Europe." Large consignments of stems sent as here described, now and then arrive in London to be sold at the auction rooms, and there are several gardens in the south of England where groups of this Fern are a conspicuous feature out-of-doors, which were started with stems freshly imported from Australia. It matures spores abundantly, and they vegetate freely with ordinary care. A five-year-old plant has a stem a foot high, and a good head of fronds a yard across.

Miss North described (*Recollections of a Happy Life*, ii., 144) the Tree-Ferns she saw in a forest of Eucalyptus near Melbourne:—"The trees ran up like gigantic hop-poles (they were said to be 300 feet or more high), with thousands of Tree-Ferns under them, also straight, and 30 feet high, swelling much at the base of their stems; a nice undergrowth of young Gums and other shrubs

under them. . . . We walked under the Fern-trees to a fallen tree, of which I could not see the end, but which was being sawn up bit by bit to use in building some new rooms at the inn. We found our way under the lace-work roof of Fern-fronds to a small stream, which was also arched over by them. Their stems were green with moss and parasites, wire-grass, Ferns, and creepers. Over them was a lovely *Tecoma jasminoides*, with white flowers tipped with deep red-purple, hanging among its glossy green leaves. . . . The Tree-Ferns (chiefly *Dicksonias*) were unfolding their golden crowns of huge crooks."

D. Youngie is described as follows by Mr. Charles Moore in his *Handbook of the Flora of New South Wales*: "Trunk rarely above 12 feet high, slender, the upper part and the base of the frond-stalks densely covered with glossy brown or blackish hairs. Rachis of the frond often ferruginous-pubescent. It resembles the New Zealand *D. squarrosa*, which, however, has light brown spreading hairs on the stalks; the fronds are harsher in texture, and the sori are smaller." A healthy example of *D. Youngie* may be seen growing in the temperate-house at Kew, along with the following Tree-Ferns. The minimum temperature for these plants is 45°. Of course, during the summer the house is kept as cool as is possible by means of ventilation. It follows, therefore, that any of the species here named would thrive in the ordinary conservatory:—

<i>Alsophila aspera</i>	<i>Dicksonia antarctica</i>
" <i>australis</i>	" <i>arborescens</i>
" <i>excelsa</i>	" <i>fibrosa</i>
" <i>procera</i>	" <i>Lathamii</i>
" <i>robusta</i>	" <i>squarrosa</i>
<i>Cyathea dealbata</i>	" <i>Youngie</i>
" <i>Dregei</i>	<i>Hemitelia capensis</i>
" <i>gracilis</i>	" <i>Smithii</i>
" <i>medullaris</i>	

W. W.

[Our Supplementary Illustration is from a photograph taken in the Bunya-Bunya mountains, and obligingly forwarded by the colonial botanist, Mr. F. Manton Bailey.]

THE WEATHER IN WEST HERTS.

THE following particulars will show the very exceptional character of the present spell of hot weather. This hot spell has now lasted for over a fortnight, during which period the shade temperature has on eleven days risen to or above 80°. On the hottest day of all (the 19th), the highest reading was 90°. Only twice previously in the last fifteen years has such a high temperature as this been recorded here, viz., in August, 1893, and September, 1898. The nights were not, as a rule, as exceptionally warm as the days; however, during the night preceding the 23rd, the thermometer exposed on the surface of the lawn never fell lower than 61°, making this the warmest night of the fifteen years. On the hottest day, the difference between the lowest night and highest day temperatures in shade amounted to 40°. It is now thirteen years since such a great range as this has been registered in any one day. At 3 p.m. the air was not only hot and calm, but also remarkably dry, the difference between the readings of a dry and wet bulb thermometer being as much as 20°. As might have been expected, the ground has now become unusually warm, the temperature at 2 feet deep being 6° warmer, and at 1 foot deep as much as 9° warmer than is seasonal. The reading at 1 foot deep is higher than any of which I have here any record. On seven of the hottest days the air was warmest about 4 o'clock in the afternoon, and there was no marked decline in temperature until after 6 p.m. Whereas at 1 foot deep the soil was warmest at midnight, and coldest about noon. No rain has fallen since the sharp thunderstorm of the 16th. If we except the few drops which came through the turfed soil percolation gauge for three days after that storm, no rainwater has come through this gauge for nearly thirteen weeks. It is sur-

prising how little my lawns benefited by the heavy rain which fell during the storm referred to, for they are now as parched up and dry as before. During the hot period above mentioned, the sun shone on an average for nine hours a day—by no means an unusual record for the time of year. *E.M., Berkhamsted, July 24.*

THE REV. W. T. HUTCHINS

Is an enthusiast in the matter of Sweet Peas, and the author of a book entitled, *All About Sweet Peas*. At the recent Conference he read a paper on the "Sweet Pea in America," in which he alluded to the work of Eckford, and to the progress that had been made since his last visit to this country five years since.



REV. W. T. HUTCHINS,
AUTHOR OF "ALL ABOUT SWEET PEAS."

HOME CORRESPONDENCE.

WANTED—A NEW STRAWBERRY.—That was the remark of one of the great Kentish Strawberry growers the other day at the Drill Hall, and he should know what are the needs of the market. Certainly the growers have "Sir Joseph" yet, and a splendid friend he has been to them, and to the nation at large. What vast quantities of that superb old variety have been on sale in every direction! Even the poorest having this season had a chance to taste Strawberries fairly well. But, said our Kentish man, we begin to want another variety that will supersede Sir Joseph; we have a splendid variety in Royal Sovereign, without doubt the most popular of all Strawberries just now, and grown everywhere for all sorts of purposes, but to find a satisfactory successor to Sir Joseph is no mean difficulty. Some growers like Leader, but many do not. Possibly it may have a great future, but more time is needed to exhibit its capacities fully. Generally the market grower does not require a variety that produces fruit in almost enormous quantities, for in such case too many of the fruits fail to mature, and these only detract from the size and finish of those fruits that do colour. Fruits must also be rich in colour, of good form, solid, and capable of resisting mildew. There seems to be just at present, certainly on stiff soils, hardly three better varieties than are Royal Sovereign, Sir Joseph Paxton, and Latest-of-All, but the merits of this trio all round will, no doubt, be vigorously disputed, because few varieties have that general adaptability which Royal Sovereign has, and will do well only here and there. We have seen scores of new varieties put into commerce during the past

fifty years, and many of them good; but they are not now amongst the few recognised best, not because they are not good, but rather because the few are better and are found to be much more widely accommodating. *A. D.*

CRATÆGUS FLAVA.—In the *Gardeners' Chronicle* for June 23, 1900, on p. 404, some reference is made regarding the above-named plant. The one with us that goes under that name is present from Virginia, south to Florida, and west to Mississippi. A specimen in our herbarium, collected from the Campus, shows a striking likeness to fig. 131. On the sandy soil of the Atlantic coast region, it makes a handsome shrub, often having a spherical head 3 to 6 metres in diameter, made so by the drooping twigs, and borne on a single trunk, holding the head 1 or 2 metres from the ground. At times the top grows into an umbrella shape. Fine specimens of this species are common in the earliest settled portion of Florida. The fruit is sold by the coloured people under the name of Summer Haws. With this class of our population it is a great favourite as a shade tree, especially in those sections where fruit-trees thrive only under diligent attention. It is a hardy, long-lived shrub, worthy of much more attention than it receives; it yields kindly to pruning, making a hemispherical or conical-shaped bush where subjected to browsing. In woods and thickets it grows straggling, and gives no intimation of its possibilities under cultivation. *P. H. Rolfs, Div. Bot., U. S. A. C., Clemson College, S. C., U.S.A., July 6, 1900.*

WEEVILS AND CHLOROPHYLL.—It would interest me very much to know if any of your readers have remarked that the simple presence of the weevil (*Otiorhynchus sulcatus*) in the beetle form on plants causes an extensive bleaching, as it were, of the green colour in their vicinity. I have so frequently observed it in connection with my Ferns that I am practically certain of finding a weevil either on the frond or in the pot whenever the normal shade of green becomes perceptibly paler in an otherwise healthy plant. A day or two since I noticed one of two plants of *A. f. f. acrocladon* in one pan; the one was entirely bleached into a pale sea-green, the other the usual colour. I said at once, "There is a weevil," and found the beetle hiding in the crown of the affected Fern—one of many cases. The weevil beetle's attack is apparently a simple gnawing of the fronds into holes, accompanied by biting off in so doing the pinnae or pinnules of divided forms; it affects the Hart's-tongues by preference, and the fronds often, but not always, become pale throughout when the beetle is present. I cannot find that this is due either to gnawing of the rachides, which might check sap flow, or to the deposit of their exudations; it seems due to some other cause, but is undoubtedly the effect of the weevil's vicinity. The beetle removed, the plant recovers its normal verdure sometimes in a few hours, sometimes in a day or two; but invariably does so in time—the chlorophyll is only temporarily affected. *Chas. T. Druery, F.L.S., V.M.H.*

A FRENCH HORTICULTURAL LIBRARY.—The National Horticultural Society of France has just issued for the use of its members a very comprehensive and well-planned catalogue of its valuable library. Unlike the catalogue of the Lindley Library, which was published under the auspices of the Trustees of the Lindley Library, the new work now under notice is not a mere list of horticultural and botanical books, arranged under author's names in alphabetical order, but is something more. Briefly stated, the French catalogue consists of two main divisions, viz., books and pamphlets. The former are then arranged under certain leading or subject headings, of which the following may be taken as examples:—French periodical publications, foreign periodical publications, botany, general horticulture, kitchen gardening, dendrology, fruit-tree culture, floriculture, &c. These headings are again subdivided into sections, and taking that devoted to floriculture, we find that the books on that subject are arranged under such titles as general works, carpet-bedding, bulbous plants, ornamental foliaged plants, greenhouse plants, Cacti, Camellias, Chrysanthemums, Dahlias, Hyacinths, Lilies, Orchids, and Roses, to say nothing of many others. By this means, the reader's task of finding any book on subjects in which he is interested is greatly facilitated. In the Lindley Library catalogue, unless the authors' names are known it would be a

difficult task to find all the books on any given subject. The part devoted to pamphlets is similarly arranged. Then, if the reader should happen to wish for the list of works by any particular author without reference to any special subject, he has only to turn to the end of the book, and there in the alphabetical list of authors he will find firstly, the author's name, and secondly, a list following of all his works that are in the National Horticultural Society's Library, with a reference to the page on which each work can be found. The catalogue is therefore doubly valuable, for only those who have had any experience in searching for books on special subjects in library catalogues can have any idea of the waste of time that is caused by the omission of subject headings. To test the value of the new French catalogue we were curious to see what English periodical publications were comprised in it, and turning to the heading of foreign periodicals, we have no difficulty in seeing at a glance that they include, *Curtis' Botanical Magazine*, *Flora Magazine*, *Floricultural Cabinet*, *Florist and Pomologist*, *The Garden*, *Gardeners' Chronicle*, *Journal of Horticulture*, *Orchid Review*, and *Kew Bulletin*. If we had wanted to find the same information in the Lindley Library Catalogue there would have been no other course before us than to have waded through about 160 pages of printed matter. The same systematic plan is adopted throughout, and it matters little what the subject may be, we have only to turn to the index to find the page on which the desired information is all grouped together. The work is an important addition to bibliographical knowledge, and likely to be very serviceable to the literary student of horticulture, and we congratulate the National Horticultural Society of France on having produced at much expense and infinite labour a work that will often be consulted by those for whom such a book has been intended. We do not know whether it is intended for sale, but it has been supplied to members gratis. C. H. P.

THE BUTCHER'S-BROOM AND TOBACCO MANUFACTURERS.—Since writing the short note that appeared in the last number of the *Gardeners' Chronicle*, I have had the opportunity of interrogating a gentleman who is a member of one of the largest tobacco manufacturing firms in London. He assures me that Butcher's-Broom is still used for damping the tobacco in cigar-making, and that no other plant or mechanical contrivance answers the same purpose so well. R. McLachlan.

FRUITING OF THE BIRCH.—In my neighbourhood (Surrey Heath) the Birch has flowered profusely, with the result that the leafage is poor. Has this been observed elsewhere? H.

SALISBURY ROSES AND SALISBURY SHOW.—"Wild Rose," in the article on the National Rose Society's show at Salisbury (see p. 41), states that Lord Penzance's Sweet Briars were sent out during Mr. W. H. Williams' lifetime. This is incorrect, for although he took a great interest in them, we did not place them in commerce till some time after his death. Climbing Niphetos we did send out during the period referred to, but the credit of securing the stock is in a great measure due to our Mr. C. G. Wyatt. The poor character of the local exhibits is quite easily explained. It was not through want of interest amongst local exhibitors, as "Wild Rose" infers, but from their inability to control that all-important factor in the case—the weather, which seemingly had prepared local exhibits for a class which the National Rose Society did not insert in their schedule, namely, for the hardest and heaviest Rose-buds not open. Keynes, Williams & Co., Salisbury.

MODEL GARDENS AT HORTICULTURAL SHOWS.—These devices, unless they can be arranged on the ground and made on a large scale, are utterly unworthy the attention of societies, and no self-respecting young gardener should have anything to do with the construction of them. On a large scale, the relative sizes of trees, shrubs, and plants generally, can be preserved, and naturalness imparted to the design which is impossible in designs on a small scale. Well drawn plans, drawn to scale, and washed in with colour show far more convincingly the capabilities and knowledge of a competitor; but this is a matter which is not to be "got out of his own head," and only to be acquired under a competent master. Every young gardener should make a point of learning to draw plans, which after all is a severely mechanical art; and

of measuring land, and working to scale on paper and on the ground. South Wall.

—If a young gardener wishes to present at some local exhibition a meritorious object under the common term "model garden," let him not devise some horrid and utterly impossible thing from out of his head, but rather seek for a nice and not large, but well-planned real garden; obtain a ground plan of it, which, with access to the garden, he should be able to produce for himself, take note of how it is planted and generally furnished, then, according to scale, proceed so far as he can to reproduce it on his 2-foot square board for the exhibition. I have seen many of these so-called "model" gardens, and never yet have I seen one that has not been utterly absurd and contemptible. To laugh at them would be to honour them. They generally merited speedy removal to the rubbish-heap. Happily their absurd pretensions seem to have struck exhibition committees, as very few of these things are now invited in competitions. Apart from their bearing less resemblance to actual gardens than a duck does to an ostrich, the "taste" displayed in floral decoration is invariably so gross as to be pitiful. We see even now in some suburban villa-gardens that are planted for the summer by the ignorant jobber or local florist, somewhat analogous colouring in blazing scarlet, garish yellow, and intense blue, lavishly intermingled—very much of the school of coloration which characterises the "model" gardener. This being invariably in his models, despises the fruit and vegetable department of a garden, but revels in gaudy tints, vivid greens, or golden sands. I can but again advise a young gardener if he wishes to present some object at a show that shall command respect, not to attempt a model at all, but rather let it be a good and faithful copy of some nice and not large garden. A. D.

BLIND STRAWBERRY PLANTS.—In the "Home Correspondence" in the *Gardeners' Chronicle* for June 30, p. 420, a correspondent signing himself "L. C.," refers to so many blind Strawberry plants being remarked this year, and he gives the names of several varieties. In these gardens the varieties Sovereign, Monarch, Veitch's Perfection, and Sir Joseph Paxton are similarly affected this season, which fruited well last year. A small caterpillar infested the plants last year, devouring the foliage, and this, together with the dry weather at the time, seemed to cripple the plants. The soil of the garden is light, and overlies ironstone. Royal Sovereign has always cropped well hitherto. A. Bateman, Brixworth Hall Gardens, Northampton.

YUCCA GLORIOSA.—There is a Yucca in flower in the gardens here which has been growing out-of-doors for close on thirty years, and from what information I can gather, the plant is supposed to be fifty years old, and has never flowered before. The length of the flower-spike is 8 feet, and it is furnished with about a thousand flowers. The height of the plant is 6 feet. The flower-spike and plant together measure 14 feet, and each flower measures 5 inches across when fully expanded. John Buckley, Brockhurst Gardens, Northwich.

WATERLOO PEACH.—The first fruits in this garden of the Waterloo Peach were gathered from a tree on the south wall on July 15, having ripened a few days in advance of Hale's Early and Early Rivers on the same wall. This variety is of a bright red colour on the sunny side, the base whitish-green. The flesh is firm, juicy, and of a fine flavour. The firmness of flesh, and fine appearance of the fruit when ripe, places it in the front rank of market varieties. The tree is hardy, a good cropper, and undoubtedly one of the best early Peaches for out-door cultivation. C. S., Ynys-y-Maengwyn, Towyn, N. Wales.

NATIONAL ROSE SOCIETY.—The object of the National Rose Society being to encourage the cultivation of the Rose, let us ask ourselves whether their *modus operandi* is best calculated to achieve that end. The amateur trophy can only be won on a successful exhibition of thirty-six distinct varieties. How many amateurs can show this number? Four or five. Is this encouraging the cultivation of the Rose? How many trees do these select four or five amateurs grow? As many as all but the very largest nurserymen. Face to face with these few select amateurs, what chance has the average amateur who grows

250 or 500? Does the National Rose Society assume that a grower of 500 trees cannot grow Roses to such perfection as to deserve the Trophy? Does the National Rose Society consider the stand which won the Amateur Trophy this year the perfection of Roses? To restrict the Trophy to a mere half dozen competitors discourages many who, if they cannot compete for the Trophy, will not compete at all. The championships is therefore confined to the few select amateurs who grow their thousands of trees, and trust to luck for a percentage of fine exhibition blooms. If the conditions of the Trophy were twenty-four distinct varieties, and the prizes now offered in the thirty-six were added to the twenty-four, making at least six prizes, with gold, silver, and bronze medals added for the 1st, 2nd, and 3rd, it would promote a keen and popular competition which in turn would promote increased and higher cultivation. A Would-be Competitor, July 24.

CAMPANULA ABIETINA.—I have grown this Campanula for a number of years, but although it lives in my rather dry soil, it does not flower freely, and I have not considered it a very satisfactory plant in my garden. I have always attributed this to the light soil, and am this season trying it with a heavier kind of compost. In a number of the gardens of my acquaintances, the soil of which is heavier than mine, the plant thrives, and makes a very pleasing object when in bloom. I am thus at a loss to account for its shyness to bloom in Mr. Raschen's garden. When it flowers freely, it is one of the most showy of alpine Campanulas. S. Arnott, Carsethorn by Dumfries, N.B.

—I have observed in your two last issues some remarks on the habit of this charming Campanula, and it may be of interest to your readers for me to state that I recently saw it flowering profusely in Messrs. Little & Ballantyne's Knowe-field Nurseries, Carlisle, along with C. Hosti and several others, and the appearance of the plants showed that they were quite at home there, although the soil is of a somewhat cold and retentive character; indeed, the staple is a blackish loam overlying a strong red clay. J. A., Carlisle.

THE "USEFUL MACHINE" AT WREST PARK.—Having known Wrest Park and the village of Silsoe for more than forty years, I have read with much pleasure "R. H. P.'s" description of the gardens in *Gardeners' Chronicle* for June 16. A cart for gathering up leaves from the lawn, fixed upon a roller instead of upon wheels, and which was mentioned by "R. H. P.," was used at Wrest during the whole time Mr. Ford was gardener there; and the idea was one of Mr. Snow's, who preceded Mr. Ford. L. E. C.

RECENT WEATHER.—On July 19, I registered a maximum shade temperature of 97° in the screen, and on the following day 96°. The five days, July 16 to 20, gave a periodic average maximum shade temperature of nearly 93°. This great heat exceeds anything in my records which go back twenty years. In 1881, July 15, gave a shade reading of 97°, but this was a single very hot day. Some interesting results have been already noted in the garden. For instance, *Cyphomandra betacea* has set its fruit out of doors during this spell of heat—a thing it has previously refused to do except under glass. Just then the bulk of outside Tomatoes were in full flower, and an enormous set of fruit has resulted. In fact this promises to be a record season for Tomatoes, and by the latter part of August and during September the markets may be glutted. A. Worstley, Isleworth.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JULY 17: *Carnation-leaves injured.*—Leaves were received from Scarborough, upon which Mr. Douglas reported as follows:—

"The three leaves seem to be scalded, but this might not have happened if the leaves had been healthy. They are not. The weather has been unfavourable to Carnations in some places. These may have been badly cultivated. Probably they had too much water, or insufficient ventilation. With ample ventilation, and the plants healthy, scalding does not take place. The eruption or raised process on the single leaf is similar to what occurs on Vine-leaves when the atmospheric

conditions are bad—viz., too much moisture and too little ventilation. No plants suffer so much from insufficient ventilation as Carnations, and a moderately moist atmosphere is injurious. This may account for both the ailments in question."

Apple-tree attacked by caterpillars.—Specimens were received from Mr. Abbey, Avery Hill, Eltham, upon which Mr. McLachlan reports as follows:—

"I only found one larva in the Apple shoots, and that appears to be some kind of Tortrix. It is often hard to name these things without seeing the insects they produce. Apple trees just now are infested with larvae of various kinds, and not the least destructive is that of the winter moth, but I do not see it in the box. Hand-picking is all very well in its way, but I should strongly recommend spraying the trees, if not too large, with some of the insecticides recommended in the gardening papers. It is late, but even now it might do good. As a rule two or three applications at intervals of a fortnight or so are necessary, and it should be done in dry weather. The solutions used in spraying are generally poisonous, but they do no harm to the fruit when in a young state, and they render the foliage deadly to insects hatching up from eggs laid on the trees. It soon disappears, but has done its work in the meantime. Spraying is used enormously in America; less so here. Of course, some ordinary commonsense care should be exercised, as with any poison."

Strawberry leaves diseased.—Mr. G. LEE sent some leaves attacked by the fungus *Sphaeria fragariae*, "Strawberry-leaf blight." It is a very destructive disease recorded from all parts of the United States (illustrated, in "Diseases of Plants," Tuleuf & Smith, p. 215).

Dahlia synanthropic sport.—Mr. EVAN DAVIES, Talsarn, Bromley, Kent, sent a remarkable specimen of twin Dahlia blossoms united back to back on coherent flower-stalks. One blossom was yellow with crimson centre, the other entirely crimson. Which was the sport was not stated, but probably the latter.

Aster seedling diseased.—The following report was received from Dr. W. G. SMITH, on samples sent by Mr. BASHAM, Fair Oak Nurseries, Bassaleg, Newport, May 7th:—

"This disease begins at the neck of the plant or below the ground, and travels upwards through the plant, producing as it goes discoloration and softening of the tissues. There is fungus growth on all discoloured parts, and I believe the mycelium is the cause of disease; it can be observed at the limit between discoloured and still green parts. Spores are produced of an oval form and colourless, a form which gives little assistance in identification. Nematode eelworms were also observed, but it is not easy to say what part they play: I should say they lived on the decaying parts. It should be mentioned that the Rev. Hilderic Friend (*Gardeners' Chronicle*, August 14, 1897), ascribes the Aster disease to a type of parasitic worm, but I did not observe this form. The cause of this Aster disease has not yet been satisfactorily cleared up in any papers I know."

Tulips diseased.—Bulbs received from Mr. MAINE, Penhill Close, Cardiff, were forwarded to Dr. SMITH, who now reports as follows upon them:—

"The plants received are infected with the Tulip Botrytis disease. The black bodies embedded in the bulb scales and dead leaves are the resting stages of a fungus which in its active stage has the form of reproductive organs known as Botrytis. It is a common disease, and this year I have reported on several cases, especially on Narcissus. On June 2nd, in the *Gardeners' Chronicle*, I recommended a somewhat similar treatment to that found successful by your correspondent—namely, to lift the bulbs after the flowering season, keep them in a dry place, or in some mixture of lime or sulphur, and to treat with sulphur before replanting. There seems to be no other way open to deal with this type of fungus. The disease evidently occurs on certain kinds of soil, but exactly what kind I cannot say yet."

PARIS EXHIBITION.

THE Horticultural Show held in connection with the above Exhibition on July 18, was not greatly different from the two previous fortnightly meetings held in June. There was a good variety of Gladioli, Dahlias, Fuchsias, and other seasonable plants; and the vegetables and fruit were very fine; notably the fruit-trees in pots staged by M. PAILLET.

To mention some among the best of the exhibits:—a set of early Chrysanthemums, "Gustave Grunewald," with no exhibitor's name attached; a group of *Phygelius capensis*, *Francoa*, *Justicia*, and *Gloriosa*, from M. SALLIER, of Neuilly; seedling Phloxes, and Gladioli, from M. VICTOR LEMOINE, of Nancy; Cannas, from MM. VILMORIN, BILLIARD, and BARRE; Zonal Pelargoniums, var. *Alliance franco-russe*, from M. BOULANGER, of Sevrès; *Hydrangea Hortensia* from MM. BOUCHER and VILMORIN; and *H. paniculata* from M. PAILLET; hybrid Phloxes from the nurseries of BOWIN, Louveciennes; and Carnations from M. ERNST BENARY, of Erlurt; and from MM. R. DES DIGUÈRES, BERANEK, NONIN, CAYEUX, and LE CLERC, RENIER, LÉON, HAMEL, and MARGUERIN.

There were also good Roses from MM. KETTEN, BOUCHER, DEFRESNE, ROTHEBERG, BOTTIGNY, SOUPERT & NOTING, GENEN, and BOURE; and fine seedling Bromeliads from MM. LÉON DUVAL ET FILS, of Versailles; *Godetias* from M. LEMAIRE; Cacti and Euphorbia, from M. SIMON, who showed also some very young seedling Cacti; a collection of Fuchsias and seedling Pelargoniums from M. NONIN; Phlox Drummondii, from MM. VILMORIN-ANDRIEU ET CIE; Gladioli,

from M. GOULEAU; Cactus-Dahlias, from M. NONIN; *Campanula fragilis*, for hanging baskets, from M. THIÉBAUT, Senior; remarkable Orchids, from MM. CHAS. MARON, of Brunoy, DAUDEMAGNE ET CIE, of Rambouillet; and less important collections from MM. BERT DUVAL ET FILS, ROBINET DALLÉ, and BERANEK.

M. CHANTIER, showed a varied collection of indoor plants, including *Curmeria*, *Dichorisandra*, *Stenandrium*, *Maranta*, *Dorstenia*, *Aglaonema*, and *Pellonia*; in the house arranged by M. A. TRUFFAUT, we noticed a small clump of *Clerodendron squamatum* in flower. G. T. G.

MEETING OF THE SCOTTISH METEOROLOGICAL.

THE EFFECTS OF SEA FOGS ON LAND CLIMATES IN SCOTLAND.

JULY 18.—Dr. BUCHAN made a statement on fogs round the Scottish coast. In 1884, he said, a heavy fog prevailed over the northern part of these islands during the harvest, which resulted in heavy loss to fishermen and farmers.

Observations on fogs were begun in 1889. The object of the observation was to determine how fogs rose, the conditions under which they took place, and how far it was possible to forecast them. The result of the investigation so far was this, that at each of the 65 lighthouses available, there occurred fogs for an average of 170 hours each year. The mean monthly number of hours was 14, and the first result worked out was that fog prevailed more on the east coast of Scotland, except the Moray Firth, than on the west. It was found that where an island or peninsula interposed between the direction of the wind which brought up the fog, and an inland water, there was no fog on the inland waters, unless there was a very dense one outside. In working out the details, lighthouses which had a great altitude were left out, as their height made them more subject to fogs.

Sumburgh Head has a height of 360 feet, and there, instead of 170 hours of fogs, there were 338; Dunnet Head, 364 feet high, had 388 hours of fog; Barra Head, 63 feet high, had 1,344 hours; and the Mull of Galloway, 325 feet high, had 421 hours. It was found that fogs were below the average from October to March, and above the average from April to September, the maximum being in June. Fogs on the east coast were chiefly caused when there was hot weather in the north of Germany and Denmark, a highly saturated atmosphere and a high barometer. If there was a low barometer in the west, then that resulted in draining from the continent a strong wind upon the eastern shores of Britain, with accompanying fog. Nearly all fogs came out of anti-cyclones, where the barometer was high, blowing into cyclonic areas with a lower barometer. On the west coast, fogs were generally accompanied by rain; on the east coast, it was the exception for them to be so. "The Scotsman."

CARDIFF AND COUNTY HORTICULTURAL.

JULY 18, 19.—The twelfth annual show was held in the Sophia Gardens (lent by kind permission of the Marquess of Bute) on the above dates. The gardens are just now looking very pretty, and the shelter of the trees afforded abundance of cool shade.

Cardiff is becoming more and more a centre for high cultivation of flowers and fruit; the area from which exhibitors come is extending, and exhibitors themselves are on the increase. The recent exhibition afforded proof of this. The several marquees were well furnished, and the arrangements in the hands of Mr. Harry Gillett, secretary, were very satisfactorily carried out. The decorative tent, 300 feet long, was a new feature, and inside it was staged a magnificent lot of decorative plants, Roses, exotics, &c. The display of fruit was not so good as formerly. Sweet Peas were represented extensively, and in infinite variety. The opening ceremony was performed early in the afternoon by the mayor, Councillor S. A. BRAIN.

In the afternoon luncheon was laid in a large marquee in the gardens. Mr. S. Medhurst presided, and he was supported by the Mayor, members of the committee, the judges, and others.

The cottagers made a grand show of vegetables. In three classes for collections of vegetables, the total number of dishes reached 180. The exhibits exceeded those of last year by more than 200, and this fact, combined with the general keenness of competition, lengthened the work of the judges far beyond the usual limits. A very noticeable feature was the miscellaneous exhibits not for competition. In this section the numerous Glorinas, and other flowers in pots, sent by Messrs. SUTTON & SONS, Reading, were a picture in themselves. Messrs. DICKSON, Ltd., Chester; Messrs. GARAWAY & CO., Clifton; and Messrs. CLIBRAN & SONS, Altrincham, sent fine collections of cut flowers. The two large groups of 150 feet space, put up by Mr. CYPHER, Cheltenham, and Mr. CROSSLING, Penarth, were also much admired. Mr. A. PETTICREW, Castle Gardens, Cardiff, staged a well arranged group of ornamental plants, and was awarded a Gold Medal.

The bouquets and floral exhibits were excellent. Such well known exhibitors were represented as Messrs. W. TRESEDER, PRICE (Queen Street), ELLIS, and SHEVING. HONOURS were about divided between Mr. A. E. PRICE and Mr. W. TRESEDER, the latter of whom won the medal for the best aggregate.

The following are a few of the principal prizes:—Six stove and greenhouse Ferns, J. W. BUCKLEY, Llanelly.

Six stove or greenhouse plants in bloom, distinct: 1st, J. CYPHER, Cheltenham; 2nd, J. W. BUCKLEY.

Six fine foliaged or variegated plants, distinct: 1st, J. CYPHER; 2nd, J. W. BUCKLEY.

Group of miscellaneous plants, in and out of bloom, arranged to produce the best effect, and occupying a space of 150 square feet: 1st, J. CYPHER; 2nd, R. CROSSLING.

Roses, twelve distinct varieties, three blooms of each, 1st, JAMES TOWNSEND & SONS, Worcester; 2nd, RALPH CROSSLING, Penarth.

Roses, Teas or Noisettes, twelve distinct varieties, three blooms of each, 1st, JAMES TOWNSEND & SONS; 2nd, STEPHEN TRESEDER, Cardiff.

Roses, twenty-four blooms, distinct varieties, 1st, KING'S ACRE NURSERIES, Hereford; 2nd, JAMES TOWNSEND & SONS.

Roses, Teas or Noisettes, eighteen blooms, distinct varieties, 1st, JAMES TOWNSEND & SONS; 2nd, STEPHEN TRESEDER.

Collection of Roses, space occupied by exhibit to measure 6 feet by 3 feet, to be shown with their own foliage and buds; no other foliage admissible: 1st, R. CROSSLING; 2nd, G. GARAWAY.

Collection of hardy flowers, in varieties, 12 feet by 3 feet, shrubby plants and trees included, 1st, W. TRESEDER; 2nd, W. WALTERS, Bath; 3rd, H. DIVERILL, Baulbury.

Non-competitive exhibits.—SUTTON & SONS (Gold Medal), DICKSON & CO., Chester (Gold Medal); CLIBRAN & SONS (Gold Medal), GARAWAY & CO. (Gold Medal).

For a collection of zonal Pelargoniums, Mr. W. TRESEDER was awarded a Silver Medal. JAMES TOWNSEND & SONS, Worcester, won the Royal Horticultural Society's Silver Medal.

WEYBRIDGE HORTICULTURAL.

JULY 19.—The annual summer exhibition was held at The Hollies, Weybridge, on the above date, and may be regarded as a successful one, for two large marquees were required to contain the various exhibits. Plants were the chief feature, being both numerous and good specimens.

For six specimens in flower, Mr. J. LOCK, gr. to J. SWINERT EADY, Esq., Otlands Lodge, Weybridge, was 1st. In this 1st prize collection occurred well-flowered examples of *Ixora Williamsii* and *Allamanda Williamsii*. Mr. W. JINKS, gr. to E. BRICE, Esq., The Beeches, Walton, was a good 2nd.

Foliage plants were best shown by the last-named gardener, who was 1st for six. Mr. LOCK being a close 2nd; and he had also the best exotic Ferns distinct.

Plants arranged for effect, made a bright display, Mr. LOCK easily winning with a group of an oval shape. The plants, were suitably chosen, well grown, and lightly disposed. Mr. E. WATFORD, gr. to J. RHODES, Esq., Weybridge, who was 2nd, had a creditable lot of plants.

Mr. W. C. PAGRAM, gr. to — CORBETENAY, Esq., Weybridge, was 1st in a smaller class, with a good exhibit.

Cut flowers were numerous and good, Mr. BAYNES winning for twelve bunches of hardy cut flowers, with a handsome collection. Mr. H. BUCKMASTER, gr. to F. W. SMITH, Esq., was 1st for eighteen bunches of Sweet Peas.

Fruit and vegetables added considerably to the display. In the former section, Mr. LOCK was the principal prizetaker, in all cases staging well.

Mr. O. BASILE, gr. to the Rev. The President, Woburn Park College, Weybridge, easily carried off the leading awards in the vegetable classes, with handsome produce.

NATIONAL CARNATION & PICOTEE. Southern Section.

JULY 25.—The annual Southern Show of the National Carnation and Picotee Society was held on Wednesday last at the Crystal Palace. There had been a record number of entries made for this exhibition, but the sudden and unexpected change to tropical weather prevented a considerable number of growers from exhibiting who had intended to do so. The date originally thought of for the show was July 25, but this was subsequently altered to the 20th; and when the Crystal Palace authorities advised the committee that the latter date was not an open one, it was decided in late spring, while furcoats were still being worn, that the 25th would be better than the 18th. As the enthusiastic President, Mr. Martin R. Smith, observed during the day, no one could have foreseen that such a brilliant weather as obtains at present would follow. But it has, and the result is this—that the flowers have been hurried to development prematurely, and the show would most likely have been fuller had it been held on July 18. There was little, after all, to regret, for there was excellent competition in most of the classes, and there were some lovely flowers.

It is a matter for difference of opinion whether Carnation blooms are seen at their best upon the exhibition-boards, with their calices drawn back, and their petals "dressed" out until the centre looks thin and exhausted, whilst each flower is almost throttled by being drawn through a stiff white collar. Our opinion is that they are not most effective in this condition, and the blooms shown with stems and foliage in vases, and "undressed," were much more interesting, and certainly had more natural grace.

But the first can judge of the merits of particular blooms best when shown in the stereotyped manner, and consequently exhibitors in the principal classes must subscribe to this fashion.

The Schedule is divided into four divisions, and exhibitors

can only enter in one of the first three, but the fourth division for undressed blooms is open to the exhibitors in Division III. Silver Cups are awarded to exhibitors who obtain the largest number of aggregate points in each division, those in the first three divisions being provided by the President. The winner of the Cup in Division I. was Mr. MARTIN R. SMITH; in Division II. Messrs. THOMSON & Co., Birmingham; and in Divisions III. and IV. Mr. R. CHATWIN CARTWRIGHT. Several new varieties were awarded the First-class Certificate of the Society.

In Divisions II. and III., the classes are for smaller numbers of flowers of the same character as shown in Division I. The fronts of the tables were again draped with scarlet, as was the case a few days previously at the Sweet Pea Exhibition, but the effect was not so bad upon this occasion, as the exhibits being dwarfer, one looked at the flowers directly from above. At the same time, it is a most unsuitable colour for use at any floral exhibition. The arrangements of the various classes was good, and Mr. HENWOOD and his Committee deserve thanks for this.

CARNATIONS, BIZARRES, AND FLAKES.

There were only four exhibits in the class for twenty-four blooms, and Mr. M. ROWAN, 36, Manor Street, Clapham, beat such excellent cultivators as Mr. MARTIN R. SMITH and Mr. J. WALKER, of Thame. Of Flakes, there were Gordon Lewis, George Melville, Mrs. Rowan, Merton, and Thalia, all very pretty, the two first flaked with mauve or purple, and the others with rose. Of Bizarres, among others there were Robert Lord, Admiral Curzon, J. S. Hedderly, Fred, Valkyrie, and Robert Houlgrave. Mr. MARTIN R. SMITH took 2nd place with flowers that for the greater part were exceedingly clean in ground colour, but some of them hardly so full as those on the exhibit already noticed. Most attractive of Flakes were Claudina, Geo. Melville, and Glinka; and of Bizarres Arthur Burton, Master Fred, and Autocrat. Mr. J. WALKER, Thame; and Mr. G. CHAUNDY, Oxford, followed in this order.

The best collection of twelve blooms, bizarres and flakes, was shown by Messrs. THOMSON & Co., Birmingham, and contained the premier bizarre bloom in the show, viz., Robert Houlgrave; Mr. F. WELLESLEY, Woking, was 2nd.

A class for six blooms in Division III. was won by R. C. CARTWRIGHT, Esq., Selby Park, Birmingham, his varieties being Sarah Payne, Thalia, Gordon Lewis, Master Fred, John Wormald, and W. Skirving; Mr. A. R. BROWN, Birmingham, was 2nd; and Mr. D. WALKER, Kilmarnock, who won 6th prize in this class, had one of the best blooms of Robert Houlgrave in the show.

SELF-COLOURED CARNATIONS.

The principal class was one for twenty-four blooms, and Mr. MARTIN R. SMITH won the 1st place, showing Much-the-Miller, Mrs. Eric Hambro, and Ensign, all white varieties; Cecilia Almoner, Seymour Cockran, and Touche, yellow; Michelet and Benbow, buff; Sultan, Agnes Sorrel, and Sir Bevis, crimson; Joan of Arc, rosy-mauve colour; Etna and Lyons, vinous red; Anne Boleyn, deep pink, and a few others. Mr. C. TURNER, of the Royal Nurseries, Slough, was 2nd, and included several varieties not represented in Mr. SMITH's exhibit, as Lightning, salmon-scarlet; Triton, deep crimson; Keepsake, white; Goldfinch, yellow, and others. Mr. M. ROWAN was 3rd; Mr. G. CHAUNDY 4th, and there were several other successful exhibitors in this class.

The best six blooms of a single variety were from Mr. G. CHAUNDY, who was 1st, with the lovely Germania; Mr. TURNER 2nd, with Lady Hermione, pink.

For twelve self Carnations, distinct (Division II.), there were numerous exhibitors, and as many as eight prizes awarded. The winners of the 1st prize were Messrs. THOMSON & Co., Birmingham, who showed Exile, light rose; Britannia, yellow; The Imp, maroon; Seagull, very pale flesh colour; Germania, yellow; Mrs. J. Douglas, cherry-red; Mrs. E. Hambro, white; Percy, crimson; Miss M. Sullivan, rose; Her Grace, almost white; Nabob, light orange; and Edith, purple-rose. Mr. F. WELLESLEY was 2nd, and S. A. WENT, Esq., Thames Ditton, 3rd.

The best six blooms of any variety (Division II.), were Mrs. E. Hambro, from Mr. F. WELLESLEY.

Mr. C. F. THURSTON, Penn Fields, Wolverhampton, had 1st prize for six distinct varieties (Division III.), showing Mrs. Eric Hambro (Premier), Tabley, Mrs. Jas. Douglas, Exile, Dick Donovan, and Miss A. Campbell. Mr. A. CHATWIN, Edgbaston, was 2nd, and eight other prizes were given in this class.

FANCY VARIETIES.

An exhibit of twenty-four fancies from Mr. R. SMITH was very pretty; some of the yellow ground fancies with edgings of shades of rose, mauve, and purple, are most attractive. Of the five exhibitors in this class, Mr. SMITH won premier honours, showing Oakley, Paladin, Tibullus, Bedemere, Lily Duchess, Ormonde, Argosy, Falca, Hidalgo, Elaine, Alexandra, Aglala, a light-coloured sport from Oakley shown under the name of Oakley, Ossian, Goldlocks, Perseus, Persimmon, Guinevere, and Patroclus. The flowers from Mr. C. TURNER, Slough, were a trifle smaller in size. He had a very distinct variety in Desmonline, intensely deep purple on white ground; Lightning was noticeable, also Alexandra, yellow ground, with rose and purple markings; and many others. Mr. J. WALKER, Thame, who was 3rd, had fewer deep coloured varieties; Mr. H. W. WEGUELIN, Dawlish, was 4th; and Mr. G. CHAUNDY, 5th.

The best half dozen blooms of a fancy Carnation with yellow or buff ground, were of the variety Chas. Martel, from Mr. C. TURNER. The well known Hidalgo, from Mr. M. R. SMITH, was 2nd; and Voltaire, from C. A. TATE, Esq., West Dulwich, S.E., 3rd.

The only fancy Carnation with ground colour other than yellow or buff, was the white ground Desmonline, with very heavy purple or crimson markings.

The best dozen blooms of dissimilar fancies (Division II.), was shown by Mr. F. WELLESLEY, who had a very nice collection of blooms. Mr. S. A. WENT was 2nd; and Messrs. THOMSON & Co., Birmingham, 3rd.

The best variety shown in six's (Division II.), was Monarch, heavily marked with crimson, from Mr. F. WELLESLEY; and Voltaire, marked with rose, 2nd, from Messrs. THOMSON & Co. R. C. CARTWRIGHT, Esq., Selby Park, Birmingham, won 1st prize for six distinct varieties, showing Artemus, Voltaire, Brodick, The Gift, Perseus, and Eldorado; 2nd, Mr. W. SPENCER, Windsor; 3rd, Mr. A. H. BEADLES, Sydenham Park, S.E.

PICOTEEES.

There were three collections only of twenty-four Picotee blooms, white ground, and the best was from Mr. M. R. SMITH. These varieties are not very effective upon the white collars, the extent of colour in them being small and confined to the extreme margins of the petals, Mrs. Sharp, Mrs. Beswick, Bessie, Duchess of York, and Madame Richer were amongst the rose-edged; and Brunette, Amy Robsart, and Marian, among the mauve and purple-edged blooms. Mr. J. WALKER was 2nd, and showed Little Phil, rose edged; and Esther, purple edged, very finely. Mr. M. ROWAN took 3rd prize.

Mr. F. WELLESLEY had 1st prize for the best dozen white-ground Picotees distinct, showing Amy Robsart, Favourite, Little Phil, Fanny Tell, M. D. Anstiss, Mrs. Sharp, Thos. William, Brunette, Campanine, Esther, Tortoise, and Lady Louisa. Messrs. THOMSON & Co., who were 2nd, included Pride of Leyton, the premier light-edged white-ground Picotee.

Much more effective are the yellow-ground Picotees. The best twenty-four blooms came from Mr. M. R. SMITH, who showed the varieties Duke of Alva, Dinorah, Gronow, Onda, Badmington, Heliodorus, Alcinous, Lady Cynthia, Lady St. Oswald, Daniel Defoe, Lauzan, Aldebaran, Childe Harold, Gertrude, and Speranza; Alcinous, with deep purple edge, was most distinct. Mr. C. TURNER, Slough, was 2nd, and showed a nice lot of flowers, including several varieties not in Mr. SMITH's stand; Mr. G. CHAUNDY was 3rd, and two exhibitors who had included Fancies in their exhibit were necessarily disqualified.

Mr. S. A. WENT had the best dozen flowers of yellow ground Picotees (Division II.); and Messrs. THOMSON & Co. were 2nd. There were nine collection in the class.

For six blooms of a yellow ground Picotee, Mr. M. R. SMITH was 1st, showing Childe Harold, a lovely variety, with an infinitesimal edge of purple. Countess of Jersey was 2nd, from Mr. G. CHAUNDY; and Empress Eugénie 3rd, from Mr. H. W. WEGUELIN. Mr. E. TURNER, who was 4th, showed Galatea.

His Excellency was the best yellow ground Picotee, in collections of six blooms, from Mr. F. WELLESLEY; and Empress Eugénie, from Mr. S. A. WENT, 2nd.

The best collection of six white ground Picotees (Division III.), was from Mr. R. C. CARTWRIGHT, Selby Park, Birmingham, who had Amelia, Little Phil, Mrs. Beswick, Harry Kenyon, Fortrose, and Isabel Lukin. Messrs. PEMBERTON & Sons, Walsall, was 2nd; and Mr. D. WALKER, Kilmarnock, 3rd.

Mr. W. SPENCER, Windsor, had the best collection of six yellow ground Picotees; and Mr. R. C. CARTWRIGHT was 2nd.

SINGLE SPECIMEN CLASSES.

In the single bloom classes, the best scarlet bizarre was Robert Houlgrave, from Messrs. THOMSON & Co., and the same variety won 2nd and 3rd places. The other varieties shown were Admiral Curzon, which was 4th, and Robert Lord, 5th and 6th.

The best crimson bizarre was J. S. Hedderly, which took 1st, 2nd, 3rd, 5th, and 6th places, the only other variety staged being Lord Salisbury, which was 4th.

Among pink bizarres, the variety W. Shervington took all prizes except 3rd and 4th, which were gained by Sarah Payne. Gordon Lewis and James Douglas, the first named taking the 1st prize, were the best purple flaked varieties; and Sportsman took five of the six prizes for the best scarlet flaked variety. Merton was the best rose flaked variety.

Of selfs, Mrs. Eric Hambro was the best white or blush flower, and Dick Donovan 2nd.

The best rose or pink-coloured variety was a seedling shown by Mr. COLLEY SHARP; and The Sirdar was the best scarlet, red, or crimson; it has a magnificent petal, and is pale crimson colour.

The best naron or purple was Agnes Sorrel; and the best yellow, Britannia; but Germania and Cecilia also won prizes in this class. Benbow won 1st and 2nd prizes for the best buff variety.

Of yellow ground Picotees, Hidalgo was adjudged the best; and the best red heavy-edged Picotee was John Smith. The best light edged, Grace Darling; Miriam won premier place as the best purple, heavy edged; and Livinia as the best purple light edged variety. Lady Louise was the best heavy edged rose or scarlet; and Favourite, the best rose light edged variety. Gertrude was the premier heavy edged yellow ground Picotee, and Childe Harold the best light edged.

BLOOMS SHOWN NATURALLY.

The largest class for flowers shown in vases, as grown, and with Carnation foliage, was one for twelve distinct varieties, three blooms of each. Mr. SMITH was well to the front in this class, and showed excellent blooms, all of them wired, and relieved with an abundance of strong, healthy Carnation foliage. The yellow self Lafayette, the crimson Sir Bevis, the white Jervis, in addition to many fancies, looked capital. Mr. C. TURNER, Slough, was 2nd; and Mr. J. WALKER, 3rd.

In Division II. there was a similar class for six varieties of Selfs and Fancies, and this was won by S. A. WENT, Esq.; Messrs. THOMSON & Co., Birmingham, were 2nd; and Mr. F. WELLESLEY, 3rd.

In addition to the above classes, almost all of those in Division IV. were for undressed blooms, and among the principal prize winners in these were Mr. H. ROGERS, Woodbridge; Mr. R. C. CARTWRIGHT, Messrs. W. PEMBERTON & Sons, Walsall; Mr. L. C. GORDON, Nunhead; Mr. H. S. BARTLETT, Shooter's Hill, S.E.; Mr. D. WALKER, Kilmarnock; Mr. A. CHATWIN, Edgbaston; Maj.-Gen. W. GILLESPIE, Sydenham (Fancy vases); G. A. WAGRAM, Esq., Maidenhead; and Mr. H. G. OWEN, King's Heath, Birmingham.

Mr. MARTIN R. SMITH won 1st prize for table decorations of Carnations; Mr. H. ROGERS, Woodbridge, 1st prize for sprays; Mr. M. R. SMITH for button-holes; and Mr. M. V. CHARRINGTON for a vase decorated with Carnation flowers.

CARNATIONS IN POTS.

The best twelve specimen plants in pots were from Mr. MARTIN R. SMITH, who had excellent plants, including the varieties Almoner, yellow; Agnes Sorrel, crimson; also Fancies, &c. Mr. CHAS. TURNER was 2nd.

Mr. T. CARRUTHERS, Reigate, had the best single specimen, showing the variety Mrs. Tremayne.

An excellent group of Carnations in pots, covering an area of 50 square feet, was shown by Mr. M. R. SMITH (gr., Mr. C. Bick), who had 1st prize. Mr. CHAS. TURNER, Slough, was 2nd, and Mr. CARRUTHERS 3rd.

PREMIER BLOOMS.

The best blooms of the different sections in the Show were as follows: Bizarre Robert Houlgrave, from Messrs. THOMSON & Co.; Flake Geo. Melville, from Mr. ROWAN; heavy edged, white ground Picotee Little Phil, from Mr. R. C. CARTWRIGHT; light edged, white ground Picotee Pride of Leighton, from Messrs. THOMSON; Self Mrs. E. Hambro, from Mr. C. F. THURSTON, Wolverhampton; heavy edged, yellow ground Picotee Gertrude, light edged, yellow ground Picotee Childe Harold and Fancy Hidalgo, all from Mr. M. R. SMITH.

CERTIFICATED VARIETIES.

The Society's Certificate was awarded to the following varieties: Beauty of Exmouth, a large white self, very fragrant, and having good petals, from Mr. W. J. GODFREY, Exmouth; Lavinia, a light purple edged Picotee, from Mr. J. DOUGLAS, Great Bookham; Lady St. Oswald, Lauzan and Gertrude, yellow ground Picotees, from Mr. M. R. SMITH, and Mr. JAS. DOUGLAS; and Alcinous, a purple edged yellow ground Picotee, from Mr. JAS. DOUGLAS.

MISCELLANEOUS.

Mr. JAS. DOUGLAS, Great Bookham Nurseries, Surrey, had a fine lot of Carnation blooms in about fifty varieties.

Mr. F. G. FOSTER, Brockhampton Nurseries, Havant, showed Sweet Peas; as did also Mr. H. T. DIXON, Woodside Gardens, Hailsham, Sussex.

DURHAM, NORTHUMBERLAND, AND NEWCASTLE BOTANICAL AND HORTICULTURAL.

JULY 25, 26, 27.—Great credit is due to the energetic secretary and committee for the excellent show held on the above dates. It was attractive in every sense of the word, so that the Society deserves the support of all lovers of horticulture. It was held in the Leazes Park, which is now looking its best. Few shows have so great attractions, for in addition to the splendid display of plants, fruit, flowers, and vegetables, which were arranged in four large marquees, the public have only to walk outside to see a very beautiful park. The Society is considered to be the oldest continuous horticultural society in the kingdom, having been founded in the year 1824, and has been carried on with varying success every year since. It has certainly had much to contend against, thus show is a great encouragement to the secretary and committee to further perseverance.

STOVE AND GREENHOUSE PLANTS

are not shown as they were ten or twelve years ago; then the great south country growers used to come north, Cypher of Cheltenham, Tudgay, and most of the great plant exhibitors in the kingdom.

The great features of to-day's show are the Roses, magnificent stands of forty-eight blooms being set up by Mr. HUGH DICKSON, Royal Nurseries, Belfast; Messrs. HARKNESS, Bedale, York; Moxie; Messrs. MILNE, Catterick, Yorks; and other noted growers.

Cut herbaceous flowers are also shown in great perfection, and the principal exhibitors of these were Messrs. HARKNESS, Bedale, Yorks; and Messrs. KERR BROTHERS, Dumfries. The two collections staged were placed in the order given, 1st and 2nd, and formed a great feature of the show.

There is nothing special to say regarding the plant classes.

Print was not up to the average of former years in quantity and quality, but good collections were staged by Mr. Melndoe, gr. to Sir J. W. Fraser, Hutton Hall, and Mr. Nicholls, gr. to Lady Beaumont, Carlton Towers.

Mr. JNO. McINTYRE, Woodside Gardens, Darlington, won premier prize for a group of plants.

Messrs. CUTBUSH & SON, London, had excellent border Carnations.

MISCELLANEOUS SOCIETIES.

Shirley Gardeners' Association.—The monthly meeting was held on Monday, the 10th inst., in the Shirley Parish Room, between twenty and thirty members being present. A large number of Roses, Sweet Peas, Dahlias, &c., were displayed by Mr. LADHAMS, F.R.H.S., The Shirley Nurseries;

NYMPHÆA GIGANTEA.

Of all the Water-lilies known to us, this is certainly the biggest, and we are not sure that it is not the most attractive also. Our illustration (fig. 16) was taken from a flower exhibited by Mr. Hudson at the Drill Hall, and shows the flowers of much smaller dimensions than the plant is capable of producing. More than forty years ago we remember it in the Oxford Botanic Garden, when it was grown by the late Mr. W. H. Baxter, and produced flowers nearly if not quite double the size of those shown in the illustration. The colour of the petals is of a pure

and indeed for many years previously, the Beans in Provence have been infested by a species of beetle (fig. 17), whose ravages have seriously injured the crops. The year 1899 was remarkable for a perfect invasion of this pest in the valley of the Durance. The Beans most attacked are the local varieties of *Phaseolus vulgaris*, edible podded Beans, Dwarf Beans, and others which are consumed in the district and not exported.

For these particulars M. Mingaud is indebted to M. Jacques Hasslach, seedsman, of Nîmes, who was obliging enough to forward also some of the plants infected, in which I discovered *Bruchus rresectus*,

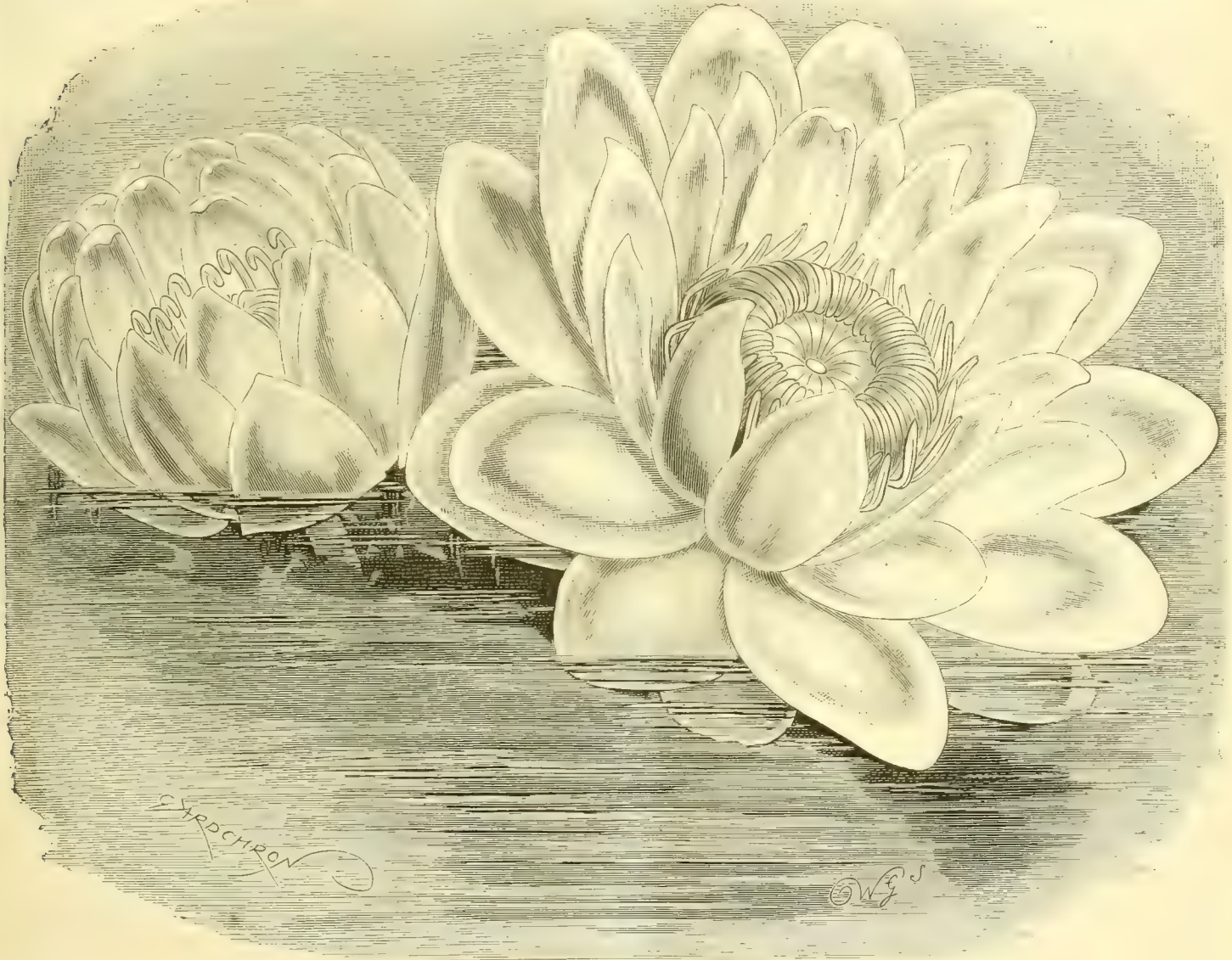


FIG. 16.—*NYMPHÆA GIGANTEA*: COLOUR OF FLOWERS PALE BLUE; HALF NATURAL SIZE.
(Recommended an Award of Merit by the Royal Horticultural Society at its Meeting at Richmond on June 27.)

Messrs. ROGERS, Ltd., Red Lodge Nurseries; J. W. FLEMING, Esq. (gr., Mr. W. Mitchell); and Col. SINKINS (gr., Mr. E. T. Wilcot). Among the exhibits was a fine bough of Rose Crimson Rambler, from Mr. LADHAMS, which excited much attention. The 1st prize, for six Roses, was awarded to Mr. T. VERDON of Red Lodge; the 2nd to Mr. MITCHELL, and the 3rd to Mr. LADHAMS. To Mr. VERDON was also awarded a First-class Certificate for the best Rose in the show; to Mr. WILCOX, a Certificate for Dahlias; and to Mr. VERDON for Sweet Peas. Mr. LADHAMS opened a discussion on the Roses, and gave many useful hints on their culture. Messrs. Miles, Cleverly, Mitchell, Verdon, and others took part. In conclusion Mr. LADHAMS presented Mr. Curtis, the retiring Hon. Sec., with a Silver Teapot on behalf of the Committee, and Mr. Curtis returned thanks for the kindness. Mr. John Miles was unanimously elected Hon. Sec. in succession to Mr. Curtis, at a Committee meeting held for that purpose on Friday evening, the 13th inst.

blue, with a profusion of yellow stamens. The species is a native of Queensland, and we have figured it in former years growing in its native lakes. We can scarcely think it would be hardy in this country, but where heat can be afforded no more beautiful plant can be grown. Associated with the pink *Nelumbium* it is especially attractive.

THE BEAN WEEVIL.

WE extract the following particulars from a paper published at Nîmes in the "Notes Zoologiques" par Galien Mingaud, and forwarded to us by Mr. J. Hasslach, of Nîmes:—"From the year 1897,

the cause of the mischief. This insect is known under different names, in all parts of the world, but has only been recognised as being injurious to Beans for about twenty years. It originated in America, and was imported into Europe, probably, with some American Beans.

Hitherto, in France, only the southern plantations have been troubled with the *Bruchus*, the growers having suffered last harvest a loss of from 30 to 40 per cent. The seed merchants therefore obtained from the environs of Naples the beans required for sowing, the varieties cultivated in that part of Italy being the same as are used in France. Anjou, Touraine, and Auvergne, where are large

plantations of Beans, have not yet been troubled with this pest.

Bruchus irisectus is a coleopterous insect of the weevil family. It is short, ovoid, from 3 to 5 millimetres long, by from 2 to 3 broad. Above the colour is dark grey, marked with black and white, with the tip of the antennæ and the last segment reddish (the rest of these organs are black), the feet, pygidium and extremity of the abdomen also reddish. Beneath the dark grey colour is equally prominent. The corselet is very conical. The hinder legs have a noticeable tooth, and are not channelled beneath. The fourth interstice of the elytras has no swelling at the base. The antennæ are shorter than half the length of the body.

Such are the distinguishing characteristics of this weevil. French entomologists consider that there are about eighty species of weevil, each one peculiar to a particular leguminous species.

The larva is white, like a very soft small maggot; it is destitute of feet, the head is scaly.

The habits of the Bean-weevil may be thus summed up: when the plant is in flower (July and August) the female *Bruchus* pierces with her oviduct the ovary of a completely developed flower, and therein lays one or several eggs. These are white, and of microscopic size. The little larva soon hatches, selects a seed, makes an almost imperceptible hole in it, therein buries itself, and feeds at the expense of the cotyledons, never attacking the hilum, by which the nourishing vessels bring sap to the seed.

Bean and larva grow simultaneously, and sometimes one Bean may support several larvæ. Growers have observed that most weevils are found at the first gathering in September, and that these Beans are even larger than those of the second crop gathered a month later. The size of the Beans



FIG. 17.—*BRUCHUS GRANARIUS*.
(Allied to the species mentioned in the text.)

tenanted by the weevils—there may be from six to eight weevils in each seed—is thus explained by Dr. Decaux:—

“The larva is not injurious to the Bean, but useful, as it sets up a local inflammation favourable to an accumulation of sap; hence, the seed attacked is always larger, and ripens sooner, than other and healthy seeds in the same pod. This exuberance of sap is evidenced by an accumulation of starch and nitrogenous matters beneficial to the larvæ.

Shortly before the maturity of the Bean (in mid-September), the larva is fully developed, and ready to change. It enlarges its hole as far as the pericarp, which it never injures, and which serves for the escape of the perfect insect; it surrounds itself with a little covering of fragments, agglutinated with secreted mucus, and then changes.

In the south the perfect insect appears in November or December. The weevil may, if the weather be mild, leave the Bean, taking off with its rostrum the small circle of the pericarp left intact by the larva at the extremity of the pod. But, if the winter be severe, it remains sealed up in the Bean until the first fine days. Thus all the metamorphoses of the insect are effected in the seed. It only leaves it by an opening, plainly evident, circular, and proportionate to its size. The weevil, in its perfect state, is found in winter in the granaries and stores of growers and seedsmen, and in sheltered nooks; in summer, on flowers to which it is harmless. Pairing takes place in June and July, and so the cycle recommences.

After Wheat, Beans are considered the most valuable food-stuff, hence some growers and

vendors have endeavoured to prevent the multiplication of *Bruchus irisectus*, and many means of dealing with it have been tried. One of the most widely used, because an inexpensive remedy, consists in putting some drops of bisulphide of carbon in the bags containing infested Beans. These bags are then well shaken that the vapour of the carbon may penetrate into the seeds, and asphyxiate the insects. This process leaves no smell, the sulphide of carbon being very volatile, and does not hinder the germination of the seeds. It would be well to take preventative measures, and act thus after the harvest, placing the seeds in large boxes or barrels hermetically sealed, and wherein they remain for twenty-four hours. The seeds are then to be spread out on sheets spread on the ground, where they are in the air, and can be moved about for an hour. As the

should be taken at once. Unhappily, the average peasant is too easy-going to take these minute precautions. The treatment mentioned is useful also for all food-grains, such as Peas, Lentils, Vetches, Broad Beans, &c. All these vegetables are subject, when green or dry, to attacks from different species of weevils, whose habits are almost identical with those of *Bruchus irisectus*. If the precautions taken prove ineffectual, an alternation of crops is to be recommended, such as is practised in Lentil-growing countries. The Lentil-weevil, *Bruchus pallidicornis*, so multiplied that in regions where this plant was cultivated, it was found necessary to cease growing it for some years to starve out the insect. It is in every way desirable that general protective measures should be taken for the destruction of these injurious insects, or the prevention of the havoc that they cause.”



FIG. 18.—SWEET PEA “CUPID” AS A POT PLANT.

sulphide is not only volatile but highly inflammable, all fire, matches, &c., must be kept away. The seed can be hand-picked, but this process takes too long.

Another simple, but good plan, is to throw the Beans into water, and leave them to soak for some hours. The Beans attacked, whether they do or do not contain insects, float, while the healthy ones sink to the bottom.

The fastidious may be reminded that the consumption of larvæ of insects in fresh vegetables, or of weevils in dried vegetables, is quite harmless. Seeds intended for food may, after harvesting, be passed through an oven heated to from 55° to 60°, C. This plan is in every way to be recommended. As long as the insects are in the fresh Beans, there is nothing to betray their presence; so that the entire crop, considered to be healthy, and stored in a granary, will be found in a month or two to be entirely spoilt; therefore buyers and sellers both should examine their stores carefully once a week in winter to see if the Beans are affected. If a weevil is found, the steps recommended above

SWEET PEA CUPID.

At the Sweet Pea celebration at the Crystal Palace last week, the dwarf-growing “Cupid” strain showed to very little advantage. Messrs. Atlee Burpee & Co., of Philadelphia, offered prizes in three classes for Cupid varieties in pots, and in each instance the result was disappointing. Our illustration (fig. 18), however, shows that the original white-flowered variety, when successfully cultivated, may be made a very ornamental pot-plant. There are now numerous varieties of this dwarf-growing strain, and the colours obtainable in them are very varied. Some growers have quite failed to make them useful as bedding plants in this country, but Mr. George Stanton, the clever gardener at Park Place, Henley-on-Thames, relates to us with enthusiasm, how well they succeed in his garden. His practice is to sow the seeds in boxes indoors, and remove them to the open ground after they have commenced to grow. When sown in the open ground they invariably come up irregularly, and usually make a poor show. Our readers would do well to give Mr. Stanton's method a trial.

Obituary.

THE LATE MR. BENJAMIN R. CANT, COLCHESTER.—Although Mr. Cant had been ailing for some years, his death will make a serious void in the ranks of successful rosarians. Mr. B. R. Cant was a stalwart grower when comparatively little was known as to the propagation and culture of Roses, and he held the field of Rose-culture in ever widening circles, and in higher perfection at Colchester till the last.

As a friend and neighbour in East Anglia for some forty years, I would like to add how much most Rose-growers of the present day, exhibitors, and judges, are indebted to him for his hospitable house of call in Rose-culture, when this charming art was so little understood in those early days of doubts and difficulties, and no lover of Roses was ever turned empty away. And it seemed to matter little whether you wanted to see the man who had become your friend, or wanted to purchase his Roses in dozens, hundreds, or thousands, you were equally welcome. B. R. Cant's home became the home for all lovers of Roses, and for forty years or more some of us have enjoyed the rare feasts of Roses and Rose-lore and learning served out on these occasions. As rosarians we feel the poorer for the loss of our friend. The Colchester feast of Roses will not pass from remembrance; and although they may be continued in a fashion, we cannot but regret the loss of our leader and founder, B. R. Cant. True, he has died full of honours. His home is full of Rose honours as I have often seen in my visits, and it is said he possessed some 2,000 medals and trophies.

Had Mr. Cant devoted more time to the raising of seedlings, Prince Arthur, a fine crimson seedling, would not have been almost his only attempt in this line; and it is a singular fact that this Rose has seldom been so well grown as in its own home by the raiser. Some forty-five years ago Mr. Cant was chiefly instrumental in putting into commerce three or more of the more popular, and durable, of all our Roses—Gloire de Dijon, General Jacqueminot, and Jules Margottin. If in addition to the national trophies, cups, and other honours, we wish to credit the rosarian with, let us continue to plant every available space with these three, or equally good or better, Roses to his memory.

Mr. B. R. Cant was a great cultivator, and a most successful distributor. Residing on dryish land he was one of the first to observe that a loose surface was equal or superior to a good application of water among Roses. And perhaps was the first rosarian to discover that a change from a green crop to a white or Barley might prove the salvation or the higher perfection of the Rose.

Fortunately, the deceased left two sons in the business, which is not likely seriously to suffer, though not a few of us will always miss the well-known familiar face of B. R. Cant and its cordial genial welcome.

As to Colchester, it is rising in importance daily as the great Rose centre of England—and is likely to become more wholly a Rose garden in the future. D. T. Fish, an Old Member of the National Rose Society.

TRADE NOTICE.

THE Head-office of Smith's Advertising Agency is now located at 100, Fleet Street, London, E.C.

SWEET PEA SCENT is now being prepared for public sale from flowers grown in Mr. ECKFORD's nursery at Wem. There were samples at the Crystal Palace last week, and the perfume is certainly that of the Sweet Pea, and it is very agreeable and persistent.

"THE WINNS."—The formal opening of The Winns takes place to-day (Saturday), Mr. SAM WOOD, M.P., performing the ceremony, assisted by Mr. R. J. TRICE, J.P., the Chairman of the Urban District Council. Mr. FRANK LLOYD and Mr. ARTHUR LLOYD will represent donors.

MARKETS.

COVENT GARDEN, JULY 26.

(We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day but often several times in one day. Ed.)

OUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums	1 6-2 6	Maidenhair Fern,	4 0-8 0
Asparagus "Fern,"		per doz. bunches	
bunch	2 0-2 6	Marguerites, p. doz.	8 0-6 0
Carnations, per doz.		bunches	
blossoms	1 0-2 0	Mignonette, dozen	4 0-6 0
Cattleyas, per dozen	9 0-12 0	bunches	0 6-1 0
Eucharis, per dozen	3 0-5 0	Montbretias, bunch	0 6-1 0
Gardenias, per doz.	1 0-2 0	Odontoglossums, per	
Gladiolus, scarlet,		dozen	3 0-6 0
per dozen	3 0-5 0	Roses, Red, per doz.	1 0-4 0
— white, per doz.	3 0-5 0	— Tea, white, per	
Lilium Harrisii, per		dozen	2 6-4 0
dozen blossoms	2 0-3 0	— Safrano, per doz.	2 0-8 0
Lilium lancifolium		— Maréchal Niel,	
album, doz. blms.	4 0-8 0	per doz.	4 0-8 0
Lilium rubrum, doz.	4 0-8 0	— Catherine Mer-	
Lilium longiflorum,		met, per dozen	2 0-5 0
per dozen	2 0-3 0	Smilax, per bunch	4 0-5 0
Lily of Valley, per		Tuberose, per doz.	
doz. bunches	6 0-18 0	blossoms	0 9-1 0



MR. HENRY ECKFORD, OF WEM, SALOP.

who, as we have frequently stated, has for the past twenty-one years been more intimately associated with the development of the Sweet Pea than any other person.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, English,		Lemons, case	16 0-25 0
Julians, and Kes-		Melons, each	2 0-3 0
wicks, in sieves	2 0-2 6	— Foreign, each	2 3-4 6
Apricots, box	1 6-3 0	Nectarines, per doz.	
— sieve	8 0-10 0	Class A.	9 0-12 0
Bananas, bunch	3 0-10 0	Class B.	3 0-6 0
Cherries, English,		Oranges, Murcia, p.	
per sieve	4 0-7 6	case	9 0-18 0
— Napoleons, fine,		Peaches, per dozen	
per sieve	9 0-11 0	Class A.	9 0-12 0
Currents, blk., sieve	6 6-7 0	Class B.	3 0-6 0
— red, sieve	2 0-3 6	Pears, Californian,	
— white, in gals.	1 6-2 6	cases	8 0-10 0
Figs (New), per doz.	1 0-3 0	French Pears in	
Gooseberries, sieves	2 0-3 0	sieves—	
Grapes, Hamburgh,		Jargonelle	7 0-8 0
new, per lb.	0 9-1 3	Windor	6 0-7 0
— Alicante	1 0-1 3	Pines, each	6 0-7 0
— Colmar	1 6-1 6	Plums in sieve	4 0-7 0
— Gros Maroc, per		— in baskets	2 0-6 0
lb.	1 6-1 0	Raspberries, pun-	
— Muscats, A.,		nets, doz.	3 0-6 0
per lb.	2 0-3 0	— cwt.	22 0-24 0
— Muscats, B.,		Strawberries, 12 lb.	3 0-7 0
per lb.	1 0-1 6	— English, pecks	2 0-3 6
— Belgian, per lb.	0 8-1 0	— punnets, doz.	4 0-6 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	5 0-7 0	Ferns, small, per	
Arbor-vitæ, var. doz.	8 0-36 0	100	4 0-6 0
Aspidistras, p. doz.	18 0-36 0	Ficus elastica, each	1 6-7 6
— specimen, each	5 0-10 6	Foliage plants, var.,	
Cannas, per dozen	18 0-0	each	1 0-5 0
Crotons, per doz.	18 0-30 0	Lily of Valley, each	1 9-3 0
Cyclamen, per doz.	8 0-10 0	Lycopodiums, doz.	8 0-4 0
Dracenas, var., per		Marguerite Daisies,	
dozen	12 0-30 0	per dozen	8 0-12 0
— viridis, per doz.	9 0-18 0	Myrtles, per dozen	6 0-9 0
Ericas, var., per doz.	12 0-36 0	Palms, various, ea.	1 0-15 0
Eucynimus, various,		— specimens, each	21 0-63 0
per dozen	6 0-18 0	Pelargoniums, scar-	
Evergreens, var.,		let, per dozen	8 0-12 0
per dozen	4 0-18 0	— Ivyleaf, per doz.	8 0-10 0
Ferns, in variety,		Spiræas, per dozen	6 0-12 0
per dozen	4 0-18 0		

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aubergines, per dz.	1 6-2 0	Mushrooms, house,	
Artichokes, Globe,		per lb.	1 6-2 0
per doz.	1 3-2 0	Onions, picklers	
Beans, Scarlet		per sieve	3 6-4 0
Runners, p. bus.	4 0-6 0	— Egyptian, per	
— per sieve	2 0-4 0	cwt.	4 0-4 6
— Broad, or		— Green, dozen	1 6-2 6
home-grown, per		Parsley, 12 bunches	6 0-9 0
bushel	2 0-2 6	— per sieve	0 9-1 0
— English, p. bus.	4 0-6 0	Peas—	
— per sieve	2 0-4 0	English, per	
Beetroots, New, per		bushel	1 6-3 0
bunch	3 0-4 0	— in bags	3 0-4 6
Beet, per dozen	0 9-1 0	Potatoes, New,	
Cabbages, tally	2 0-5 0	per cwt.	4 0-5 0
— dozen	0 6-1 0	— English, new,	
Carrots, new, p. dz.	1 0-2 6	Bedfords, cwt.	4 0-5 0
Cauliflowers, per dz.	1 6-3 0	Radishes, dozen	1 6-2 0
Cress, per dozen		Salad, small, pun-	
punnets	1 6-2 0	nets, per dozen	1 3-1 6
Cucumbers, doz.	1 9-3 0	Shallots, new, per	
Endive, new French,		dozen bunches	1 6-2 0
per dozen	4 0-6 0	— new, per lb.	0 3-0 6
Garlic, new, dozen		Spinach, per sieve	2 0-2 6
bunches	2 0-4 0	— French, sieves	
Horseradish, Eng-		per 24 lb.	2 0-3 0
lish, bundle	1 6-2 0	Tomatoes, English,	
— foreign, per		new, per 12 lb.	4 0-4 6
bundle	0 10-1 0	— Channel Islands,	
Leeks, per dozen		per lb.	0 3 0-3 6
bunches	2 0-4 0	Turnips, new, per	
Lettuce, English		dozen	8 0-5 0
Cabbage, bush.	2 0-2 6	— in bags	3 0-4 0
— English Cos,		Vegetable Marrows,	
per score	1 0-2 0	per dozen	1 0-3 0
Mint, new, p. doz.		Watercresses, p. doz.	
bunches	2 0-4 0	bunches	0 4-0 6

REMARKS.—The hot weather causes Lettuce to bolt quickly, and good samples are becoming short in supply. Peas also show the effects of the heat. Bananas ripen up so quickly that these may be purchased at very low prices in some cases. Marrows are coming in very fast, and the supply all round is good.

POTATOS.

Cherbourg, 4s. 6d. per cwt.; Bedford, 8s. to 90s. per ton. John Bath, 32 & 34, Wellington Street, Covent Garden.

FRUIT AND VEGETABLES.

GLASGOW: July 25.—The following are the averages of the prices recorded since our last report:—Lisbon Apples, 16s. to 18s. per case; Oporto do., 8s. to 9s. do.; Melons, Valencia, 8s. 6d. to 10s. do.; Bananas, extra, 11s. to 12s. per bunch; No. 1, 9s. to 10s. do.; No. 2, 7s. 6d. to 9s. do.; Oranges, Valencia, ordinary 420's, 18s. to 20s. per case; large and extra large do., 22s. to 26s. do.; Lemons, Palermo, cases of 300, 11s. to 14s.; 360's, 8s. 6d. to 10s.; boxes of 200, 300, and 360, 5s. 6d. to 7s. 6d.; do., Naples, cases of 420, 16s. to 20s.; 300 and 360, 13s. to 15s.; Grapes, English, new, 1s. to 2s. per lb.; Tomatoes, Valencia, 8s. to 10s. 6d. per case; Onions, Oporto, 4s. to 4s. 6d. per cwt.; Maltese, baskets, 2s. 9d. to 3s. 3d. per cwt.; Egyptian, 3s. 6d. to 4s. do.; Potatoes, Maltese, 10s. per cwt.; Mushrooms, 10d. per lb.; Turnips, Scotch, 2s. 9d. to 3s. per cwt.; Parsley, 6d. to 8d. per dozen bunches; Lettuce, 4d. to 6d. per dozen; Cucumbers, 1s. 3d. to 1s. 6d. do.; Cauliflowers, 8d. to 1s. 3d. do.; Cabbages, 6d. to 1s. 3d. do.; Peas, 1s. 4d. to 1s. per bushel.

LIVERPOOL: July 25.—Wholesale Vegetable Market.—Potatoes, per cwt.: Early Regents, 3s. to 5s.; Kidneys, 4s. 9d. to 6s.; new, 1s. to 1s. 3d. per 21 lb.; Turnips, 6d. to 8d. per 12 bunches; Swedes, 2s. 9d. to 3s. per cwt.; Onions, foreign, 2s. 9d. to 3s. 6d. per cwt.; Parsley, 6d. to 8d. per dozen bunches; Lettuce, 4d. to 8d. per dozen; Cucumbers, 1s. 3d. to 1s. 6d. do.; Cauliflowers, 8d. to 1s. 4d. do.; Cabbages, 6d. to 1s. 3d. do.; Peas, 1s. 4d. to 2s. per bushel; Beans, 1s. to 1s. 3d. do. St. John's: Potatoes, new, 1d. to 1½d. per lb.; Grapes, English, 2s. 6d. to 3s. 6d. per lb.; Pineapples, 5s. each; Apples, 3d. to 6d. per lb.; Tomatoes, 6d. do.; Currants, white, 4d. do., and black, 5d. do.; Gooseberries, 2d. and 3d. per quart; Peas, 8d. to 1s. per peck; Cherries, 6d. to 8d. per lb.; Cucumbers, 4d. each.

SEEDS.

LONDON: July 25.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report a poor attendance on to-day's seed market, with but little business passing. New Trifolium, both French and English, although good and abundant, meets as yet with but

little inquiry. The samples of new home-grown Trefoil which have thus far appeared show unsatisfactory quality. Canary and Hemp-seed, with small and diminishing stocks, favour holders. Some offers of this year's Thousand-headed Kale are now coming to hand. Blue Peas and Haricot Beans move off slowly on last week's terms.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period July 15 to July 21, 1900. Height above sea-level 24 feet.

1900.		DIRECTION OF WIND.	TEMPERATURE OF THE AIR.					RAINFALL.	TEMPERATURE OF THE SOIL AT 9 A.M.					LOWEST TEMPERATURE ON GRASS.
JULY 15 TO JULY 21.	At 9 A.M.		Day.	Night.	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.							
	Dry Bulb.								Wet Bulb.					
	deg.		deg.	deg.					deg.	ins.	deg.	deg.	deg.	
SUN. 15	S.S.E.	66.9	59.9	80.3	50.5	...	67.2	63.3	58.1	41.5				
MON. 16	W.N.W.	76.2	68.5	91.5	59.7	...	68.4	63.5	58.3	51.5				
TUES. 17	S.S.W.	70.9	60.9	81.8	59.5	...	70.0	64.1	58.7	48.8				
WED. 18	S.S.E.	75.0	64.8	84.1	54.3	...	70.5	64.7	58.9	45.5				
THU. 19	E.S.E.	78.7	67.5	91.1	51.5	...	69.9	65.2	59.1	40.6				
FRI. 20	S.S.W.	79.2	68.7	89.8	66.2	...	71.8	65.5	59.4	57.5				
SAT. 21	W.S.W.	66.7	62.8	76.5	58.7	...	71.1	65.9	59.7	49.4				
MEANS...	...	73.4	64.7	85.0	57.2	Tot. ...	69.8	64.6	58.9	47.8				

Remarks.—A week of very hot dry weather, the temperature on the 16th being the highest registered this year; and the maximum shade temperature being 91° for each day.

GENERAL OBSERVATIONS.

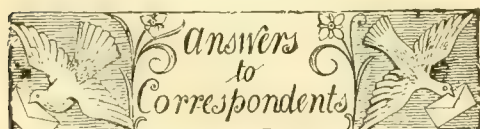
The following summary record of the weather throughout the British Islands, for the week ending July 21, is furnished from the Meteorological Office:—

"The weather was dull and changeable in the western and northern parts of the United Kingdom, with occasional falls of rain. In the eastern, central, and southern districts it was mostly fine and warm in the earlier half of the week, but with thunderstorms in many places on the 16th. During the latter half of the period thunderstorms occurred in most parts of England and Ireland, and in some instances they were accompanied by very heavy falls of rain and hail.

"The temperature was above the mean, the excess ranging between 4° and 5° in all the more western and northern districts, but amounting to as much as 6° in the Midland Counties, and 7° in England E. and S. The highest readings occurred on very irregular dates. In Ireland and Scotland the thermometer did not reach 80°, but in nearly all the English districts it exceeded 85°, the highest readings of all being 95° in England, E. (at Cambridge on the 20th), 92° in England, S. (in London on the 16th, and again on the 19th), and 90° in England, E., and the Midland Counties (at Hillingdon and Oxford on the 19th). The lowest readings, which occurred mostly during the earlier half of the week, ranged from 45° in Scotland, N., the Midland Counties, and England, S.W., to 52° in England, N.W., and to 57° in the Channel Islands.

"The rainfall was less than the mean in all districts, excepting Scotland, W., and was extremely slight in England, S. In isolated parts of England heavy rains were, however, experienced during the thunderstorms of the 19th to 21st, the amount on the 20th being as large as 1.7 in. at East Dereham, and 1.1 in. at Loughborough.

"The bright sunshine was less than the mean in Scotland, E. and W., and also in Ireland, S. In other districts it exceeded the mean, the excess being large in the Eastern, Midland, and Southern Counties of England."



AGAPANTHUS UMBELLATUS: W. J. C. The best time to divide these plants is at the re-commencement of growth in the spring, and the present is the next best season, the plants getting re-established before the winter. Employ very good drainage, as the plant requires much water whilst growing; rich, stiffish loam, decayed manure, an eighth of the whole, and three-quarters coarse river-sand. Pot firmly, and place in the shade at this season.

AMPELOPSIS VEITCHI: Constant Reader. How can you expect us to decide as to the cause of the decline of health of the plant when you send no shoot, foliage, root, or soil, and afford us no information?

BOOKS: Table Decorations. H. H. M. We know of no modern work. That by Miss Anne Hassard, published some twenty years ago, may sometimes be met with at the second-hand book-shops.—H. A. Dr. Focke's work, *Die Pflanzen-Mischlinge*, was published at Berlin in 1881. Messrs. Williams & Norgate, 14, Henrietta Street, Covent Garden, will get it for you.

BOOKS ON THE CULTIVATION OF GRAPES AND PEACHES FOR MARKET: Jaelbois. We know of no such works, and would advise you to purchase *Vines and Vine Culture*, by A. F. Barron, new edition, just out, and published at the office of the *Journal of Horticulture*, 12, Mitre Court Chambers, Fleet Street, E.C.; also the *Hardy Fruit Book*, by D. T. Fish, published at the Bazaar Office, 170, Strand, London, W.C.

CYANIDE OF POTASSIUM AS A FUMIGANT IN VINERIES: W. J. L. It is a most effective killing agent, both for garden insects and gardeners, and you must be very careful not to inhale the fumes.

FUCHSIA: S. H. Beyond being very light and sandy, the soil sent shows nothing injurious to plants. There may be chemical manures in dangerous quantity mixed with it, but their presence is not discoverable without analysis.

GOOSEBERRIES: Pad. The fruits were in such a condition when unpacked, that we could do nothing but throw them away as soon as possible.

GRAPES: J. Benbow. The berries sent have many traces of mildew, which has been destroyed by the flowers-of-sulphur applied by the gardener. There are also indications of the spot fungus. In either case, the affected fruits are spoiled; preventive measures should be taken as soon as the fruits are set another year, not waiting till mildew or "spot" declare themselves. The safest means is sulphide of potassium, ½ oz. in 1 gallon of water.

GREEN-FLOWERED ROSES, &c.: R. B. There are green-flowered Roses, but the monstrosity is not confined to any particular species of this very large family of plants. The petals of the flower assume the general appearance of leaves; the calyx does not differ essentially from the calyxes in other Roses. It goes under the name of *Rosa viridiflora*, and a plant producing green Roses may be depended upon to perpetuate the anomaly. The variety "Cameos," brought out by Schwartz in 1881, in the normal state has the fine rose colour of the China (Monthly Roses), with white rays. It flowers in umbels, and is very floriferous and fragrant. That the flowers should be "green, and slightly brown," shows that the variety is liable to colour, if not to other variations in the blooms. The variety is contained in the *Dictionnaire des Roses*.

HAWTHORN: J. B. The Hawthorn-twigs are infested with the larvæ of the common gall-making Midge (*Cecidomyia*). Clip your fences earlier, and burn the clippings.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—D. Bros, Norwich. 1, *Brodiaea laxa*; 2, *B. hyacinthina* var. *lactea*; 3, *B. ixioides*.—C. B. *Dracocephalum peregrinum*, L. A. B. R.—W. E. G. *Eryngium planum*, L.—E. C. C. D. *Phacelia congesta*, Hook.—X. Y. Z. 1, *Spiraea opulifolia*; 2, *Tauga canadensis*, probably; 3, *Thuiopsis dolabrata*; 4, *Thuya orientalis* var.; 5, *Cotoneaster nummularifolia*; 6, *Thuya orientalis* var. *aurea*.—Lover of Flowers. Why not address the editor, and save delay and confusion. Your plant is *Limnanthes Douglasii*.—Highlands. *Strobilanthes Dyerianus*, so far as we can tell from a single leaf. Why send such a poor scrap?—M. J. W. 1, *Spiraea Lindleyana*; 2, *Amelanchier communis*; 3, *Spiraea opulifolia*: thank you for sending such good specimens and information—O, si sic omnes!—W. A. S. 1, *Vaccinium myrtillus*; 2, probably *Stachys Betonica*; 3, *Lathyrus pratensis*—all shrivelled to tinder.—W. M. Oakwood. 1, *Melilotus officinalis* (*Melilota*, forage-plant); 2, *Circea lutetiana*, a pest

in a garden-border: let it never transgress the limits of the wildest garden); 3, *Sanguisorba officinalis*; 4, *Melampyrum sylvaticum*; 5, *Galium uliginosum*; 6, *Veronica officinalis*.—W. Trow. *Heuchera sanguinea*.—Amateur. *Oncidium Gardneri*; it and the species you name grow together.—H. M. *Asparagus decumbens* and *Colocasia antiquorum*.—E. W. *Empetrum nigrum*. The *Cecylogyne* is a fine plant, but has often been figured.—Loofah, J. French. *Luffa ægyptica*.—J. R. W. 1, Correct; 2, *Olearia Haasti*; 3, Doubtful; 4, *Tilia laciniosa*; 5, *Picea polita*; 6, *P. Alcockiana*; 7, *Arides odoratum*; no number, *Cupressus Lawsoniana*.—R. W. 1, *Staphylea pinnata*, Bladder Nut; 2, *Eunonymus europæus*, Spindle-tree.—A. J. Keen. *Senecio squalidus*; 1 and 2, seedling Veronicas, which we cannot name; 3, next week.—H. B. B. The Wig-plant, *Rhus Cotinus*.—J. H. *Syringa Josikea*, or possibly *S. Emodi*, *Galega officinalis alba*; Orchid, next week.

NECTARINES CRACKING: X. Y. Z. One of two things has happened. The disbudding has been too severe for a young, vigorous tree, consequently there has been no outlet in leaf and shoot-growth; or, what is improbable, seeing that the fruits are very fine specimens, the border was flooded with water after being for some time in a dry condition. Alternations of dryness and wetness often bring about cracking of the flesh and the stone, both noticeable in your fruits. No disease—merely errors in treatment of particular tree.

NUMBER OF MEN REQUIRED TO DO THE WORK OF A GIVEN NUMBER OF FORCING-HOUSES: Jaelbois. We fear that if your experience of market gardening is so deficient as it seems to be, you cannot succeed in the contemplated venture. Why not enquire of some market growers, or take service with one or two such, for a couple of years? We cannot answer the query.

PARSLEY: Anxious. The soil sent contains no wire-worms, but it is poor stuff, like that of many kitchen gardens which have been under cultivation for generations and have received no dressings of virgin soil or stiff turfy loam. Such soils seldom give satisfactory results, and animal manure does not help. Apply lime in an unslaked state, trench deeply, and dress with loam. Apply basic slag and superphosphates.

QUICK-SET HEDGE: J. W. Chiefly the work of microfungi, but the curious moss-like growth also harbour the larvæ of a species of *Cecidomyia*, and the branches numerous, examples of the young puparia of the common Mussel-scale (*Mytilaspis pomorum*). Treat as for above.

QUITTING SERVICE: Fletcher. In the absence of any written agreement to the contrary, a month's notice on either side is required to terminate an engagement.

SQUIRRELS AND FRUIT: P. B. These animals are often very destructive in fruit-gardens, to which they have access. There is nothing for it but to shoot them, and hang a few of the bodies in the trees.

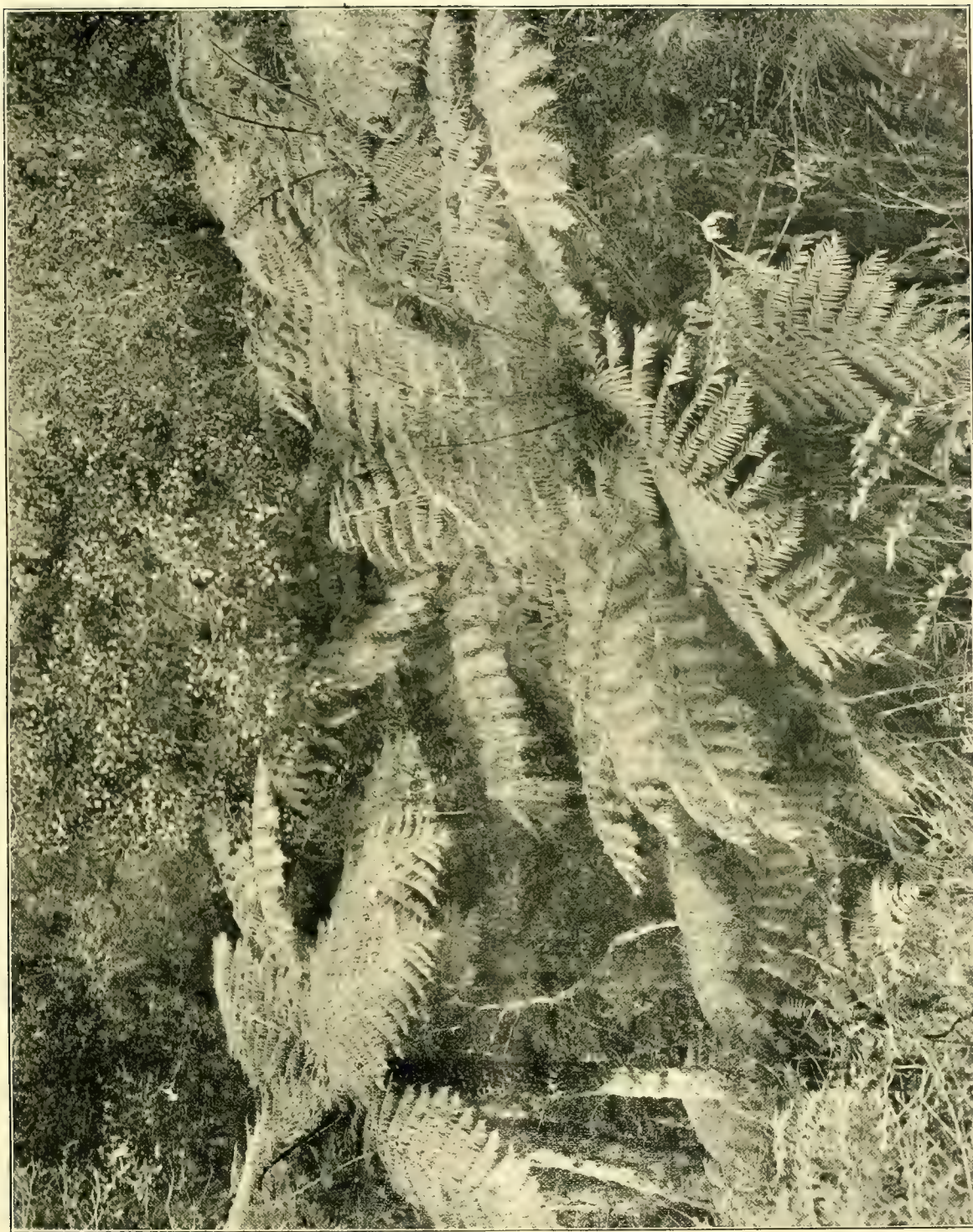
SULPHURIC ACID AND TREE LEAVES, AND VEGETABLE REFUSE AND STABLE MANURE: Selsdon. The action of the acid would be to check or entirely prevent fermentation in the substances to which it was applied, and hinder their conversion into plant food.

TOMATO DISEASE: C. R. S. Do you never read your *Chronicle*? If you had, you would have seen numerous recent articles and illustrations on the subject. The fruits are attacked with a fungus for which you can do nothing this year. Read up the subject so as to be ready for action next year, or ask us for information early in the season.

VINES: T. B. Specimens shrivelled, but evidently affected by fungus, probably mildew; but the berries are not in a condition to judge.

VINES: M. S. A case of "spot," often mentioned in the *Gardeners' Chronicle*. See recent answers to correspondents.

COMMUNICATIONS RECEIVED.—W. Hesketh.—W. G. S.—P. W.—H. T. M.—W. E. G.—W. R. (too late).—J. R. J.—W. T.—J. M. B.—J. H.—W. E. G.—W. P.—A. R. S.—L. Hankin Salmon.—E. M.—A. O'N.—W. B. S.—W. M.—J. L. W.—J. R.—Expert.—F. C. S. Wolfville, N.S.—A. D. R. P. B.—S. A.—C. Sharpe & Co.—P. B.—T. C.—B. H.—A. Bateson.—J. Veitch & Sons.—"America."—W. T.—J. M. B.—J. H.—W. E. G.—W. P.



DICKSONIA YOUNGIA IN THE BUSH, QUEENSLAND.



THE

Gardeners' Chronicle

No. 710.—SATURDAY, AUG. 4, 1900.

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THE DAUGHTERS OF THE YEAR.
JULY.

"It was Roses, Roses all the way," sings Brown-ling in one of his least unintelligible poems; and the line is a garden motto for July. Throughout it the *flos florum* reigns supreme; when visitors entering pause before the borders we say "Yes, but come and look at the Rose-beds." The Gloire de Dijon came first, finer this year than I ever saw them, finer far than they grow high and straggling on the cottages round Dijon. Then Cheshunt Hybrid on a south wall, the ropes of immense bloom breaking away the lower boughs, the higher branches tossing over into the village street and tantalising passers by. Next opened the exposed rows of dwarf and standard which fringe the kitchen garden path; the rosary proper finally, sheltered and later blooming, but suited to the delicate Teas. It is bordered by a pergola, not brick-pillared like Miss Jekyll's, but of Pine stems intercrossed; its narrow border filled in past months with Snowdrop, Primrose, Bluebell, Foxglove; filled now with coolness delicious to sight and sense, and carpeted with leaves of White Bride, Ruga, Crimson Rambler, showered from the thick o'er arching roof, out of which peeps the brilliant orange of an aspiring W. A. Richardson, clambering up unnoticed, and defying so far the winter frosts. The pergola is met at right angles by a single trellis, clad with Honeysuckle and Aimée Vibert, the two fences sheltering a triangular bed from north and east. I prune for plenty rather than for show; this year has given me both.

More garish though less keenly than the Roses are the annual Poppies. We grow them

of every kind, Siberian, Himalayan, Shirley. I scatter the seed thinly and at intervals beside both late and early blooming plants, so that they may succeed each other, supplementary and harmonious, amongst the flowerless foliage until the end of August. Before the last scorching fortnight we had almost colour enough without them. Our blues were Delphinium, Spiderwort, Canterbury Bell (the double kinds resisting best the sunburn which embrowns single blooms). Loosestrife, Ranunculus Lingua, flourishing in a tub of water, Phlomis fruticosa and Russelliana, self-sown annual Chrysanthemums and wild Corn-Marigolds, with the magnificent Inula glandulosa, made the yellows; white Musk Mallow, Mrs. Sinkins Pink, with Cistus ladaniferus and florentinus, succeeded the whites of June. Amongst these are Delphinium Staphisagria, quite unlike its generic brethren; large flowered St. John's Wort shining out of Periwinkle leaves; Funkias, somewhat marked by snail voracity in spite of all our care; Astrantia, from what is said to be its one English habitat in Shropshire; the delicate mallow-like Sidalcea; a great patch of Catananche coerulea, increasing every year in splendour; and here and there, to mask the nakedness of cropped Doronicum, clumps of Jacoby Pelargonium, which I cover with Seakale-pots when thunder-rain is imminent. The Sweet Peas are in their glory; Countess of Radnor, Lady Mary Currie, Sadie Burpee in a group, far away from a seven-yard hedge of the old-fashioned Pea, which the novelties do not to my mind eclipse. Quite recently in bloom is Commelina, a pet with our grandmothers, now so neglected that some years ago I could hardly obtain seeds. I know no blue in the floral realm so rich. A seed of it, said the myth of my childhood, adhered once to the foot of the Flower-angel as she returned to heaven after visiting her charge below. It gazed on the celestial blue till heaven's azure passed into its tiny frame, and returned to emulate the empyrean hue on earth. It is beautifully figured in an old popular flower-book of the thirties, Miss Twamley's *Romance of Nature*. Veronica Traversii has been crowded with silvery spikes, as have its herbaceous sisters, alba, virginica, spicata. Leycesteria hangs out its long bracteated tassels of white and mauve. Astragalus Cicer, spindly in former years, shows now its full capacities of fantastic pattern in inter-crossing pinnate leaves and pure soft papilionaceous bloom. An immense Moth Mullein, taken long ago from a Surrey roadside, has increased with cultivation, till it sends up this year forty panicles of bloom, staring out of countenance the pale yellow of a Lupin bush which borders it. Sweet William, "with its homely cottage smell," repeats itself year by year. In a corner out of sight, lest Irish visitors should spy it, is an amusing bed of Shamrock. Four years ago I wrote just before St. Patrick's Day to a daughter of Erin, begging that she would obtain from her friends in various parts of Ireland some roots of "undoubted Shamrock." They came, were planted, grew; but grew as three different plants—Trifolium procumbens, minus, and repens. The Shamrock is, in fact, a graceful fable. The name does not occur in literature before the eighteenth century. The association of the plant with the Trinity is modern, nor has it any historical connection with St. Patrick. Close by is another religious plant, the Calvary Clover—Medicago echinus. Obedient to rural superstition, we sow it always upon Good Friday. The young leaves

carry crimson blood drops, fold in prayer at night, expand at sunrise in thanksgiving, while the spinous spherical fruit uncoils into a strangely perfect crown of thorns.

Amongst our coarser plants are Giant Heracleum; Onopordon, the so-called Scotch Thistle; Virgin Mary's Thistle, with its great white-spotted leaves; Polygonum japonicum, already ten feet high, and with two months more of growth; Evening Primrose, expanding its blooms soon after sunset. An American poetess declares that they open with an audible snap, "blossom with a silken burst of sound," but mine are always mute. Two very wild plants complete the list—the Bryonies, white and black, allied in name, but, except as climbers, not in nature. The name is Greek, a word meaning to bubble over, from the streaming, rambling, gadding overflow of their tendrilled shoots. My white Bryony, B. dioica, grows up a clump of Ivy, from which project the thick arms of an American Bramble; round them it wreathes itself, pendulous or soaring, in a hundred graceful fantasies. Its root when old is as big as a man's body, forked often into similitude of trunk and legs. It shared the wild beliefs which in the Middle Ages gathered round the Mandrake, and was sold, Sir T. Brown tells us, in his lifetime for large sums. The black Bryony, Tamus communis, with dark sagittate leaves, is less luxuriant. I train it on an arch of pea-sticks, grateful to both plants in the autumn for their lustrous berries.

So ends July—not without a touch of sadness, as I vaticinated a month ago. Apart from the havoc wrought by the tropical fortnight past, it tolls always in its close, first among the year's daughters, somewhat of a parting knell. The cuckoo is gone, the thrushes are silent, flowered stems cut back, leaves brown, plants exhausted. The annuals have still to come. They are August's garland, but they bear, I always think, to plants of summer the relation borne by visitors to residents at my beloved English lakes; as multitudinous, as unassimilating, as transitory. I go to Windermere in June to meet the historic denizens of the classical, quiet villages, with their surviving ancient names—Arnold, Wordsworth, Quillinan, Fletcher, Richardson. They are lost through August in the holiday tide which crowds hotel and lodging, just as ephemeral Godetias, Clarkias, Calliopsis, Alonsoa, Nemesia, take the place of the June perennials, which time develops and endears. Neither certainly can be spared, but, as when the tripper tide has ebbed, Lacustrine natives resettle in their old homes and ways, so when the showy annuals are withered and cast into the oven there will still be sober store of Helianthus, and Harpalium, and Michaelmas Daisy, China Asters, thick-leaved Sedum, early Chrysanthemum, and lovely Japanese Anemone, to bring late flowers to the bees, and make autumnal music for *Corycius senex*.

NEW OR NOTEWORTHY PLANTS.

CATTLEYA INTERMEDIA VAR. CERULEA.

SOME excellent photographs, together with coloured drawings and dried flowers of a very pretty Cattleya, have been sent to the Editor by Señor Graciano A. de Azambuja, of Porto Alegre, in the province of Rio Grande do Sul, S. Brazil. It is a native of that district, and differs from typical C. intermedia in having the front lobe of the lip of a violet-blue colour instead of rose-purple. This colour also extends round the apical margin of

the side lobes, and the rest of the flower is pure white. In other respects it agrees with the type, including its floriferous character; for one of the photographs shows a group of three plants crowded with flowers, and forming quite a picture. It is a very distinct and pretty variety, and we do not remember to have met with it before.

Another variety is also mentioned, which has the front lobe of the lip rose-coloured, and the sepals and petals slightly tinged with rose. Thus the species appears to be rather variable; indeed, Tweedie, so long ago as 1837, remarked: "There is no end to its varieties." The latter collector, who met with it in the district of "St. Kathrin's," described it as growing "equally well on the sea-beaten and the moss-covered tree in the heart of the forest, and "to be found in bloom at all seasons." Lindley described Tweedie's plant as *C. maritima* (*Bot. Reg.*, sub-t. 1919), but it is only a form of *C. intermedia*. *R. A. Rolfe*.

OUTDOOR CULTIVATION OF THE PEACH.*

LINNÆUS divides the Peach into two varieties: that with the downy fruit as the Peach commonly so-called, and that with the smooth-skinned fruit as the Nectarine. There are various instances of fruits of both descriptions growing on the same tree. Trees raised from seed have not only borne both the downy and smooth-skinned varieties, but fruits have been produced which have been smooth-skinned on one side, and downy-skinned on the other (see fig. 20). The French consider these as identical, and arrange them into four divisions, namely:—

1. The freestone Peach, the flesh of whose fruit separates readily from the skin and the stone;
2. The freestone Nectarine, or smooth Peach;
3. The clingstone Peach, whose flesh is firm, and adheres to both skin and stone;
4. The clingstone smooth Peach or Nectarine.

It has been said that the Peach will not pay for outdoor culture; of course, some kind of protection from frost must be provided, particularly when blooming in the spring, which is the most critical time. I do not say they can be successfully grown as standards in the open, but should be planted against some kind of fence; or, better still, against a wall. This should, if possible, face the south or west, or south-east.

I am of opinion that much better results could be obtained from outdoor Peach-cultivation, if the same care was bestowed as is given to those under glass.

For instance under glass the Peach-tree is planted in a specially prepared soil, it is properly attended to in the matter of syringing, tying, watering, &c., it is kept free from all insect life, and all its wants are well looked after; it will then generally reward the gardener with a good crop of fruit.

Now how often does a Peach-tree outside get this treatment. It is planted probably in the ordinary soil of the garden, perhaps where some other tree has been growing for years before, so that the soil is exhausted. It is nailed to the wall, or whatever it is planted against; the young shoots are tied or nailed in, and allowed to remain till the ties decay, instead of being taken away from the walls annually, as would be done to trees growing under glass. If grown indoors it would be syringed at least twice a day during the growing season; outside it would most likely have to depend on the rain, and sometimes it would even be deprived of that, by the coping of some kind placed on the top of the wall to keep the spring frosts away. This coping is useful in a way, but it is often left too long over the tree, when the rain is kept off and more harm than good is done.

If this is the case, sufficient moisture will not be obtained by the tree, it will become infested by red-spider, green-fly, &c., and become an eye-sore to all that pass by. You may think this is exaggeration, but several cases quite as bad, if not worse, have come under my notice. When the person in charge tells you that Peaches out-doors will not do well, and will not pay for trouble bestowed on



FIG. 20.—A FRUIT, PARTLY NECTARINE AND PARTLY PEACH.

them, in nine cases out of ten this is because they are not properly looked after; give the out-door Peach-tree a fair chance, plant it in good soil, look well to moisture at the roots by affording water plentifully, and syringe the tree when it is growing, so as to keep it clean; protect it when flowering from frosts, removing the protective material entirely when all danger from frost is gone, as



FIG. 21.—A DISBUDDING SHOOT OF A PEACH.

a, b, c, the base of the buds removed.

thorough exposure to all weathers will greatly assist in keeping it clean. Do all this, and I feel sure you will be satisfied with the result. I have never known a tree treated in this manner fail to produce a good crop of fruit.

To make a good start, Peach-growing under glass or outside, great care must be taken to secure sound, well balanced trees, that is, the branches

should be as nearly as possible equal in number and size on each side of the crown, and in the shape of a fan, and clean grown. It is very important, too, that the tree should be true to name; nothing is more annoying than to find, after cultivating a tree and paying special attention to it, that when the fruit appears it is another and, perhaps, inferior variety. Then all the work has to be done over again. I would advise all who wish to grow Peaches to secure good trees three or four years old, or even larger if possible; if these are planted in the autumn, just as the leaves are falling, a crop of fruit will be obtained in the following year. If maiden trees are bought, you will have to wait a year or two for any fruit at all. Before planting, all damaged roots should be cut away with a sharp knife, and when the tree is placed in position, the roots should be carefully spread out in the shape of a fan, allowing no two roots to touch each other.

A good position in which to plant a tree indoors is one that permits the branches to be trained under the glass roof, about 9 inches from it, and facing south, west, or east. They do fairly well on a back wall if the light is not obscured by other plants or trees in the house. I prefer the roof to any other part of a house. In training a tree it should be known that it bears its fruit upon the previous year's wood, and consequently the production of well matured annual growth is of the greatest importance.

Each healthy bud that is permitted to grow will produce a shoot, which in its turn will produce other shoots, or what we term lateral growth, the same season; and these will produce fruit and leaf-buds for the production of fruit, and the continuance of future growth in the following season. In tying or nailing in the growths nothing is gained by crowding them, and a space at the least of 4 inches should be allowed between any two shoots. In my opinion, no mode of training a Peach is equal to the fan-shape, by this I mean, that the strong arms or branches of the tree should resemble the ribs of a fan when expanded, and if such a tree be properly attended to from the first, it will rarely happen that, however far the tree may extend, accidents of course excepted, there will be any vacant spaces on the wall, and every part of it will be supplied with fruit-bearing wood.

When a young tree is weakly at first, it is best to let all the branches, especially the lower ones, have considerable elevation for a year or two, and then move them to their proper position after the weak shoots have gained strength.

Care should be taken that the sides of the tree should be nearly equal as possible in strength and in the number of main branches; all weakly and exhausted wood being removed at the commencement of each season when the only pruning that is necessary should be done.

All the growth should be regulated by disbudding in the spring and early summer. The Peach-tree, if trained against a wall, or in fact in any position, will form much more growth than required, and it is the best plan to remove all unnecessary growth at once, than to allow it to grow, and so exhaust the tree. This is what is called disbudding (see fig. 21).

In disbudding a Peach-tree, all buds starting out straight from the wall should be removed, and only those buds allowed to remain for which there is sufficient space for development. The tree should be looked over two or three times in the early part of the season, and the shape required carried in the mind's eye. It will be then found that by disbudding, when the tree is starting into growth, very little use of the knife will be required; the whole of the arranging of the branches being done by disbudding early in the season, and later, by a little pinching of the points of the more vigorous shoots. In this manner a beautifully-shaped tree may be produced, and the uselessness and waste of allowing a lot of wood to be produced, only to be afterwards cut away, will be avoided.

* Extracts from a lecture given by Mr. G. Carpenter, West Hall Gardens, Byfleet, Weybridge, before the Woking Horticultural Society, on May 7 last.

SOIL.

A suitable kind of soil for Peach-growing consists of rich turfy loam, inclined to be heavy and retentive rather than light. If the loam be naturally rich, no manure should be mixed with it, excepting a slight dressing of Thomson's, or some other of similar nature. After the tree is planted, a moderate top-dressing of farmyard-manure will keep the roots moist, and thereby assist the re-establishment of the tree.

I think that in planting young trees, it is a great mistake to mix partly decayed manure with the soil, as it is very apt to make the tree run too much to growth with coarse sappy wood and no fruit.

(To be continued.)

ORCHID NOTES AND GLEANINGS.

CATTLEYA WARSCEWICZII SATURATA.

This fine and richly-coloured form is now in flower in Mr. H. A. Tracy's Nurseries, Amyand Park Road, Twickenham, together with other fine forms of *C. Warscewiczii* and *C. Gaskelliana*. The chief distinguishing feature in *C. Warscewiczii saturata* consists in the labellum being wholly of a fine purplish-crimson colour, the yellow blotches found in other forms on each side of the centre part of the labellum being so reduced in size as to be invisible, unless the flower is closely examined. The sepals and petals are of a light purplish-rose

flower bears a very strong resemblance to the *Lycaste* × *G. S. Ball* (plana *Measuresiana* × *Skinneri*), shown by Messrs. Charlesworth & Co. at the last Temple Show, and also to *L. × Schoenbrumiensis*. It is rather smaller than *L. Skinneri*, and the substance thinner. The sepals are slightly more acuminate than in that species, and in colour whitish freckled with bright rose. Petals whitish, with irregular dotted lines of rose colour on the face. Lip cream-white, with rose-purple lines and spots distributed over the base and side lobes, and the front lobe is spotted with purplish-crimson. Column white, with rose tint at the back, and purple towards the base. A very pretty flower, but which it would not be safe to give a name to without better information, especially as there are florally similar things already in cultivation. *J. O'B.*

THE WEATHER IN WEST HERTS.

DURING the past three weeks, all the days have been, without exception, warm for the time of year; while the lowest night temperatures have on only four nights of the same period been in any way unseasonably cold. On the 25th, the shade temperature for the second time this month rose to 90°. The ground at 2 feet deep is now 6° warmer, and at 1 foot deep 5° warmer, than is seasonable. On the 27th there occurred, between 2 P.M. and 8 P.M., three distinct thunderstorms; at the latter hour there was an unusually brilliant flash of lightning, which was immediately followed by one of the loudest thunderclaps I ever remember. The rain was never very heavy, and amounted altogether to only about half an inch. A little rainwater came through the bare soil percolation gauge after these storms, but none at all through the turfed soil gauge. Indeed, with the exception of a few drops in the middle of the month, there has been no percolation through the latter gauge for nearly fourteen weeks.

JULY.

This is the eighth warm July that we have now had in succession, but only the last two of the series were exceptionally warm. That of the present year is the hottest July of which I have here (fifteen years) any record. The remarkable duration of its hot period was its most noteworthy feature. This very hot spell may be said to have lasted from the 10th to the 27th, or for eighteen days, during which period shade temperatures above 80° were registered on thirteen days, readings above 85° on five of those days, and on two days the highest reading was 90°. As a rule, the day temperatures were much more exceptional than the nights. There, however, occurred one or two nights towards the end of the month which were singularly warm, even for July. Taking the month as a whole, only once before in any July in the last fifteen years has the soil at 1 foot deep been as warm, and only twice before has it been as warm at 2 feet deep. Rain fell on eight days to the aggregate depth of rather more than 1½ in., which is about half an inch in defect of the July average. I have said rain fell on eight days, but very nearly the whole of the total quantity was deposited on two days during thunderstorms. This was not only the hottest July I have yet known here, but also the calmest, and for 340 hours, or fourteen days, the direction of the wind was some point between W. and N.W. Again, only twice before in the fifteen years has the air in any July been as dry. The sun shone on an average for 8½ hours a day, or for a longer period than in any previous July during the same fifteen years. *E. M., Berkhamsted, July 31.*

GARDEN PRODUCE PER RAIL.—The Superintendent of the Great Eastern Railway informs us that the number of small parcels of market garden and farm produce carried by the Company during the first half of the present year was 77,800. This shows a reduction of 1,100, as compared with the same period last year, the number then recorded being 78,900.



FIG. 22.—HIDALGOA WERCKLEI: COLOUR OF FLOWERS VIVID SCARLET.

HIDALGOA WERCKLEI.

THIS, which may be popularly described as a climbing Dahlia, was exhibited from the Royal Gardens, Kew, at the recent show at Richmond (fig. 22). It is a great acquisition for a conservatory, as witness by its effectiveness in the Mexican section of the temperate-house. There are two species, inhabiting the mountains of Mexico southwards to Columbia. It was mentioned in our columns August 5, 1899, as *Childsia Wercklei*, the locality being then given as the mountains of Costa Rica, where it is said to attain a height of 10 feet. The colour of the flower is vivid scarlet.

colour, and the whole flower of good form. The plants of *C. Warscewiczii* are either suspended close to the glass or placed on staging where they are situated in a good bright light, and hence the complaint that some urge that *C. Warscewiczii* is shy-flowering is not experienced.

LYCASTE HYBRID.

A flower of a pretty natural hybrid *Lycaste* is kindly sent by Mr. Theodor Franke, jun., Gross Ottersleben, Magdeburg, Germany, who states that he received it from a collector in San Salvador among a quantity of *Lycaste Skinneri* of a peculiar pale form, flowers of which he also sends. The

REPORT ON THE CONDITION OF THE FRUIT-CROPS.

[FROM OUR OWN CORRESPONDENTS.]

The words "average," "over," or "under," as the case may be, indicate the amount of the crop; and "good," "very good," or "bad," indicate the quality.

The counties are arranged in numbered groups, to correspond with those adopted in the Weather Reports of the Meteorological Department, and followed in our weekly Weather Tables.

* * Fuller comments will be given in the following numbers. See also Leading Article on page 90.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND—										
0, Scotland, N.										
CAITHNESS	Average; good	Under; good	.....	Average; good	.....	.....	Over; very good	Average; very good	.....	W. F. Mackenzie, The Gardens, Thurso Castle, Thurso
MORAY OR ELGIN- SHIRE	Over	Under	Over	Under	Over	Under	Over	Over	.....	D. Cunningham, Darnaway Castle Gardens, Forres
ORKNEY	Average; good	Average; good	.....	Under; good	Average; very good	.....	Over; very good	Average; very good	.....	Thomas Macdonald, Balfour Castle Gardens, Kirkwall
SUTHERLANDSHIRE	Average	Under	Under	Average	.....	.....	Over	Average	.....	D. Melville, Dunrobin Castle Gardens, Sutherland
1, Scotland, E.										
ABERDEENSHIRE	Average	Under	Over; good	Under	.....	.....	Average; good	Average; good	.....	John Forrest, Haddo House, Aberdeen
	Average; good	Average; good	Over; good	Over; very good	.....	Average; good	Over; very good	Average; good	.....	James Grant, Rothie Norman Gardens, Rothie
	Over; very good	Under	Under	.....	.....	.....	Over; very good	Average	.....	John Brown, Delgaty Castle, Turiff
	Average	Under	Average; good	Average; good	.....	Under; bad	Average	Average	.....	S. Campbell, Fyvie Castle Gar- dens
	Average	Under	.....	Average	.....	.....	Over	Average	.....	John M. Troup, The Gardens, Balmoral Castle, Ballater
BANFFSHIRE	Under; good	Under	Over; very good	Average; good	Under	Average; very good	Average; very good	Over; very good	.....	J. Fraser Smith, Cullen Gar- dens, Cullen
BERWICKSHIRE	Average; very good	Under	Over good	Average; good	Average; good	Under; good	Over; very good	Over; very good	Average; good	James Gemmell, Ladykirk Gar- dens, Norham-on-Tweed
	Average; good	Under; good	Average; good	Average; good	.....	.....	Average; very good	Average; very good	.....	Wm. Cairns, The Hirsell Gar- dens, Coldstream
	Over; good	Under; good	Over; good	Average; very good	Over; good	Under; good	Over; very good	Average; very good	.....	James Ironside, Blackadder Gardens, Edrom
CLACKMANNAN- SHIRE	Under	Under	Average	Average	Average	Under	Average	Over	.....	A. Kirk, Norwood Gardens, Alloa
FIFESHIRE	Under	Under	Under	Average	.....	Under	Over	Over	.....	William Henderson, Balbirnie Gardens, Markinch
	Average; good	Under	Average; good	Over	Average; good	Average; good	Over; good	Average	.....	William Williamson, Tarvit, Cupar
	Over; very good	Average; very good	Under; good	Average; good	.....	.....	Over; very good	Over; very good	.....	John Hill, Wemyss Castle Gar- dens, Fife
FORFARSHIRE	Average	Under	Over	Average	.....	.....	Average	Over	.....	W. McDowall, Brechin Castle Gardens, Brechin
	Average; good	Under; good	Over; good	Average; good	Average; very good	Under; bad	Average; good	Over; good	Not grown	Thos. Wilson, Glamis Castle Gardens, Glamis
	Average	Average	Average	Average; good	.....	.....	Over; good	Average; good	.....	William Alison, The Gardens, Seaview, Monifieth
EAST LOTHIAN	Over; very good	Under; very good	Average; very good	Over; very good	Average	Over; very good	Over; very good	Average; good	.....	R. P. Brotherton, Tynning- hame, Prestonkirk
	Under; good	Under; good	Average; good	Over; very good	Over; very good	Over; very good	Over; very good	Over; very good	.....	Thomas H. Cook, Gosford Gar- dens, Longniddry
HADDINGTONSHIRE	Average; good	Under	Under	Average; good	Under	Average; very good	Average; very good	Average; very good	Under	George Taylor, Broxmouth Park Gardens, Dunbar
KINCARDINESHIRE	Over; good	Under	Average; good	Under	.....	.....	Average; very good	Over; very good	.....	John M. Brown, The Gardens, Blackhall Castle, Banchory
	Average	Average	Average	Average	Not grown Outside	Under	Over; good	Over; good	.....	William Knight, The Gardens, Fasque, Lawrencekirk
LINLITHGOWSHIRE	Average	Good	Under	Very good	Very good	Very good	Very good	Very good	Under	James Smith, Hopetoun Gar- dens, Queensferry
MIDLOTHIAN	Average; good	Under; good	Under; good	Over; very good	.....	.....	Average; good	Average; very good	.....	D. T. Fish, 12, Fettes Row, Edinburgh
	Average; good	Average; good	Average; good	Over; good	Average; good	Over; good	Over; good	Average; good	Average; good	James Whytock, Dalkeith Gar- dens, Dalkeith
PEEBLESHIRE	Over; very good	Over; good	Over; very good	Average; good	None outside	.....	Over; very good	Over; very good	.....	Wm. McDonald, Cardrona, Traquair, Innerleithen
	Average; good	.....	Over; very good	Under	.....	.....	Over; very good	Average; good	.....	M. McIntyre, The Gardens, The Glen, Innerleithen
PERTHSHIRE	Average; good	Average	Over; good	Average	Over; very good	Very good	Very good	Average	.....	J. Farquharson, Kinfauns Castle Gardens, Perth
	Average	Under	Average	Over; good	.....	.....	Over; but late	Average; good	.....	John Robb, Drummond Castle Gardens, Crieff
	Average	Average	Over	Average	.....	.....	Over; good	Average	.....	George Croucher, The Gardens, Ochertyre, Crieff
	Average; good	Under	Over; good	Average; good	.....	Average; good	Over; good	Average; good	.....	James Ewing, Castle Menzies, Aberfeldy
	Average; good	Average; good	Over; good	Over; very good	Average; good	Over; good	Over; very good	Over; very good	.....	Thomas Lunt, Keir Gardens, Dunblane
SELKIRKSHIRE	Average	Under	Over	Average	Average	.....	Over	Average	Under	Colin Turner, Sunderland Hall, Selkirk
6, Scotland, W.										
ARGYLLSHIRE	Average	Under	Over	Average	.....	.....	Over	Average	.....	G. Taylor, Castle Gardens, In- verary
	Over; good	Under; good	Average; good	Over; very good	Over; good	.....	Over; very good	Under; good	.....	D. S. Melville, Poltalloch Gar- dens, Lochgilphead
	Over	Over	Over	Average	.....	.....	Over	Over	Over	Henry Scott, Torloisk Gardens, Aros, Isle of Mull
AYRSHIRE	Average; very good	Average; very good	Under; very good	Average; good	.....	Average; good	Over; good	Average; good	Under; very good	D. Buchanan, Bargany Gar- dens, Girvan
	Average; good	Average; good	Average; very good	Average; very good	.....	.....	Average; very good	Average; very good	.....	Thomas Simpson, Hunterston, West Kilbride
	Under	Under	Average; good	Average; good	Average; good	.....	Over; good	Over; good	.....	William Priest, The Gardens, Eglinton Castle, Irvine
	Average; good	Average; good	Over; good	Over; very good	Average; good	Average; very good	Over; very good	Average; good	.....	Thomas Gordon, Ewanfield Gardens, Ayr
	Under	Average	Under	Average	.....	Under	Over; very good	Under	.....	David Murray, Culzean Castle Gardens, Maybole

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
6. Scotland, W.										
DUMFRIESHIRE	Under	Under	Average; good	Average; good	Average	.....	Average; good	Average; good	.....	M. H., Mount Stuart House Gardens, Rothsay
DUMFRIESHIRE	Over; good	Average; good	Over; good	Over; very good	Average; good	Average; good	Over; very good	Average; very good	Over; good	George McKay, Balloch Castle Gardens, Balloch
DUMFRIESHIRE	Average	Under	Over	Over; very good	Average	.....	Over	Average; good	.....	D. Stewart, Knockderry Castle, Cove
DUMFRIESHIRE	Average; very good	Under	Over; very good	Over; very good	.....	.....	Over; very good	Over; good	.....	David Inglis, Drumlanrig Castle, Thornhill, N.B.
DUMFRIESHIRE	Over; good	Under; good	Over; good	Over; good	.....	Average; good	Average; good	Over; good	.....	John Urquhart, Hoddon Castle Gardens, Ecclefechan
DUMFRIESHIRE	Average	Bad	Over	Average	.....	.....	Over; very good	Over; very good	.....	Robert Wishart, Burnfoot Gardens, Langholm
DUMFRIESHIRE	Average; good	Average; good	Over; good	Average; good	Average; very good	Under; good	Over; extra good	Average; bad	Average	John Mackinnon, Terregles, Gardens
DUMFRIESHIRE	Average; good	Under; bad	Average; good	Over; very good	.....	.....	Over; very good	Average; good	.....	James McDonald, Drifholm Gardens, Lockerbie
LANARKSHIRE	Average; good	Under; bad	Average; good	Average; good	.....	.....	Over; good	Average; good	.....	James Miller, Castlemilk Gar- dens, Rutherglen
LANARKSHIRE	Average; good	.....	Over; good	Average; very good	Average; good	.....	Over; very good	Over; very good	.....	A. McMillan, Douglas Castle Gardens, Lanarkshire
NAIRNSHIRE	Good	Under	Very good	Average	.....	Good	Very good	Good	.....	John Anderson, Holme Rose, Port George Station
RENFREWSHIRE	Average	Under	Under	Average	Average	.....	Average; very good	Average; good	.....	John Methven, Blythswood, Renfrew
RENFREWSHIRE	Average; good	Under	Average; good	Average; good	.....	.....	Over; very good	Over; good	.....	Thomas Lunt, Ardgowan Gar- dens, near Greenock
RENFREWSHIRE	Under	Under	Average	Average	.....	.....	Over; very good	Average; good	.....	Wm. Hutchinson, Eastwood Park Gardens, Giffnock
STIRLINGSHIRE	Over; good	Average; good	Average; good	Average; good	Average; good	Under	Over; good	Average; good	.....	Alex. Crosbie, Buchanan Castle Gardens, Drymen
WIGTONSHIRE	Over; good	Average; good	Over; good	Average; good	Average; good	.....	Over; very good	Average; very good	.....	John Bryden, Dunragit
WIGTONSHIRE	Average; good	Average; good	Over; good	Over; good	Average	Under	Average; good	Average; good	Under	James Day, Galloway House Gardens, Wigtonshire
ENGLAND—										
2, England, N.E.										
DURHAM	Average	Over	Average	Under	.....	.....	Over	Average	.....	R. Draper, Seaham Hall, Sea- ham Harbour
DURHAM	Over; very good	Average; good	Over	Average	Average	Average	Over	Over	.....	James Noble, Woodburn Gar- dens, Darlington
NORTHUMBERLAND	Average	Under	Over	Under	Average	Over; good	Average	Average; good	.....	P. S. F., Castle Gardens, Alnwick
NORTHUMBERLAND	Average; good	Over; good	Average	Average; good	Average; good	Average; very good	Over; very good	Average; good	.....	George H. Ackroyd, Howick Gardens, Lesbury, R.S.O.
WORKSHIRE	Average; good	Under; good	Average; good	Average; very good	Average; very good	Average; good	Over; very good	Over; very good	.....	John McClelland, The Gardens, Ribston Hall, Wetherby
WORKSHIRE	Average; good	Average; very good	Average; good	Average; good	Average; good	Average	Over; good	Average; very good	.....	Bailey Wadds, Birdsall Gardens, York
WORKSHIRE	Average; good	Under; good	Under	Average	.....	Average	Over; very good	Over; good	.....	Geo. Batley, Wentworth Castle Gardens, Barnsley
WORKSHIRE	Good	Under	Under	Good	.....	.....	Very good	Very good	.....	J. Simpson, Studfield House, Sheffield
WORKSHIRE	Over; good	Under; bad	Average	Over; very good	Average; good	Over; good	Over; very good	Over; very good	Average	John Snell, The Gardens, Farn- ley Hall, Otley
WORKSHIRE	Over; good	Average; good	Under; good	Over; very good	Over; good	Average; good	Over; very good	Average; very good	Over; good	John Allsop, Dalton Holme, Hull
WORKSHIRE	Over; good	Under; good	Over; good	Average; good	Over; good	Under; good	Over; very good	Under; good	Average; good	J. S. Upex, Wigganthorpe, York
WORKSHIRE	Over; good	Under	Over; good	Average	Over; good	Over; good	Over; good	Good	Under	A. E. Sutton, Castle Howard Gardens, Welburn
WORKSHIRE	Average; good	Under; good	Over; very good	Over; good	Over; very good	Over; very good	Average; very good	Over; very good	Average	S. Keepence, Thirkelby Park Gardens, Thirsk
3. England, E.										
CAMBRIDGESHIRE	Over; good	Over; good	Over; good	Average; good	Over; good	Under	Average; good	Under	Average	J. Hill, Babraham, Cambs.
CAMBRIDGESHIRE	Under; good	Average; good	Over; good	Under; bad	Average; good	Average; good	Over; good	Under	Under	W. H. Gascoigne, Croxton Park Gardens, St. Neots
ESSEX	Average; good	Average; good	Average; good	.....	Over; good	Average; good	Average; good	Over; very good	.....	Henry Lister, Easton Lodge, Dunmow, Essex
ESSEX	Average; good	Over; very good	Over; very good	Over; good	Average; good	Average; very good	Over; very good	Average; good	Over; good	E. Hill, Belmont Castle Gar- dens, Grays
ESSEX	Over; very good	Average; good	Average; good	Average	Average; good	Average; good	Over; very good	Average; good	Average	H. W. Ward, Lime House, Rayleigh
ESSEX	Over	Average	Over	Average	Average	.....	Over; good	Average	Average	W. R. Johnson, Stanway Hall Gardens, near Colchester
ESSEX	Average; good	Over; very good	Over; good	Average; good	.....	Over; good	Over; very good	Average; good	.....	C. W. Hodges, The Gardens, Havering Park, Romford
ESSEX	Average	Under; good	Average	Average; good	Average	Under	Over; very good	Over; very good	Over	James Machar, Bramwoods Gar- dens, Great Baddow, Chelms- ford
LINCOLNSHIRE	Average	Under	Average	Under	Average	Under	Over; good	Average; good	Not many grown.	H. Vinden, Harlaxton Manor Gardens, Grantham
LINCOLNSHIRE	Over; good	Average	Average	Average	.....	Under	Average	Under	Average	John Rowlands, Manor Gar- dens, Bardney
LINCOLNSHIRE	Average; good	Average; good	Over; very good	Average; very good	Average; good	Over; good	Over; very good	Average; good	Average; good	Walter Barkham, The Gardens, Uppington House, Stamford
LINCOLNSHIRE	Average; good	Under; good	Over; good	Average; good	Average; good	Over; very good	Over; good	Under; bad	.....	J. Coward, The Gardens, Haverholme Priory, Sleaford
NORFOLK	Over; good	Average; good	Over; very good	Under; good	Average; good	Under; good	Over; very good	Average	Over; very good	E. C. Parslow, The Gardens, Shadwell Court, Thetford, Norfolk
NORFOLK	Over; very good	Over; very good	Over; good	Over; good	Over; good	Average	Over; good	Average; very good	Average	Wm. Allan, Gunton Park, Norwich
SUFFOLK	Over	Average	Average	Average	Over	Over	Over	Average	Under	John Wallis, Orwell Park, near Ipswich
SUFFOLK	Over; good	Average; good	Average; good	Average; good	Over; very good	Average; very good	Over; very good	Average; good	Average	G. W. Eden, Henham Hall Gardens, Wangford
SUFFOLK	Average	Average	Over; good	Under; good	Average	Average	Over; very good	Over; very good	Average	H. Fisher, Flinton Hall Gar- dens, Bungay
4. Midland Counties.										
BEDFORDSHIRE	Over	Average	Average	Under; bad	Under	Average	Average	Over; very good	Average	H. Nimmo, Cranfield Court Gar- dens, Woburn Sands, R.S.O.
BEDFORDSHIRE	Over; good	Under; bad	Average; good	Average; good	Under; bad	Under; bad	Over; good	Under; good	Average; good	H. W. Nutt, Flitwick, Ampt- hill
BEDFORDSHIRE	Average	Over	Average	Under	.....	Under	Over; very good	Over; very good	Good	Richard Calvert, Woburn Abbey Gardens, Woburn

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
4, Midland Counties										
BEDFORDSHIRE	Average	Average	Average	Under	Over; very good	Very good	Average	Under	Under	George Mackinlay, The Gar- dens, West Park, Ampthill
BUCKINGHAMSHIRE.	Good	Average	Over	Average	Very good	Under	Very good	Good	Average	James Wood, Hedsor Park, Bourne End
	Average	Average	Under	Very good	Good	Under	Very good	Good	Very good	W. Walters, Bulstrode Gardens, Gerrard's Cross
	Over; good	Average; good	Average; good	Average; very good	Over; good	Under; very good	Average; good	Average; good	Under	John Fleming, Wexham Park Gardens, Slough
	Over; very good	Over; very good	Average; good	Over; very good	Average; good	Average; good	Over; very good	Over; very good	Average; good	J. A. Rogers, Dropmore Gar- dens, Maidenhead
	Over; good	Over; good	Over; good	Over; good	Over; good	Under; bad	Average; good	Under; good	Average; good	Geo. Thos. Miles, Wycombe Abbey Gardens
	Over; good	.....	Over; good	Over; good	.....	.....	Over; very good	Average; good	Over; very good	W. Hedley Warren, The Gar- dens, Aston Clinton, Tring
	Over; much damaged by hail, July 16	Over	Over; good	Under	Over	Over; good	Over; good	Over	Under	J. Smith, Mentmore Gardens, Leighton Buzzard
CHESHIRE	Average; good	Under	Under	Average good	.....	Average	Average; good	Average; good	.....	W. C. B., Moreton Hall, Con- gleton
	Over; good	.....	Average; good	Under	.....	Average	Average; very good	Average	Average	Rev. C. Wolley Dod, Edge Hall, Malpas
	Over	Over	Over	Average	.....	.....	Over	Average	Under	W. Kippis, Walton Lea, War- ington
	Average; good	Under; good	Over; good	Over	Average	Average	Over; very good	Average; good	.....	E. Severn, The Gardens, Cora- bernere Abbey, Whitchurch
	Over; good	Under; good	Over; good	Average; good	Average; good	Under; good	Over; good	Average; good	Under	Charles Flack, Cholmondeley Castle Gardens, Malpas
	Over; good	Under	Under	Under	.....	.....	Average	Average	.....	Robt. Mackellar, The Gardens, Abney Hall, Chislehurst
	Average; very good	Under	Under; good	Average	Not grown outside	Under; bad	Over; very good	Average; very good	.....	N. F. Barnes, Eaton Gardens, Chester
DERBY	Average; good	Under; good	Under; good	Average; good	.....	.....	Over; good	Over; good	.....	W. Chester, Chatsworth Gar- dens, Chesterfield
	Under; fair	Average; good	Over; good	Over; good	.....	.....	Over; good	Over; good	Under	J. C. Tallack, Shipley Hall Gardens, Derby
	Under	Under	Under	Average	.....	Under	Average; very good	Average; very good	Average	Thomas Keetley, Darley Abbey Gardens, Derby
	Over; good	Average; good	Under; bad	Over good	.....	.....	Over; very good	Over; very good	Under; bad	F. G. Mills, Glossop Hall Gar- dens, Glossop
HERTFORDSHIRE.....	Average	Average	Average over	Average; good	Average	Under; bad	Average	Average	Average; good	Chas. Deane, Cassiobury Gar- dens, Watford
	Over; good	Average; good	Over; good	Over good	Average; good	.....	Over; good	Average; good	Average	Thomas Hedley, The Gardens, Lane House, King's Walden, Hitchin
	Over; good	Average; good	Over good	Over; good	.....	Average small	Over; very good	Average	Average; good	W. Garman, Frythesden Gar- dens, Berkhamsted
	Over; good	Average; good	Average	Average; very good	Average	Average; good	Over; very good	Average; good	Average; good	Edwin Beckett, Aldenham House Gardens, Elstree
	Over; very good	Average; good	Average; very good	Average; good	Average; good	Under; good	Over; very good	Average; good	Average	J. Turk, Pondfield Gardens Berkhamsted
	Over; very good	Average; good	Over; good	Over; good	Average; very good	Under; but good	Over; Gooseberries excellent	Average; small	Average	C. E. Martin, The Hoo Gardens, Weirwyn
	Over	Under	Over	.....	.....	.....	Over	.....	Under	Thomas Rivers & Son, Saw- bridgeworth
	Average	Average	Under	Over	Over	.....	Average	Under	Average	G. Norman, The Gardens, Hat- field House
	Average; good	Under; good	Under; good	Under; good	.....	.....	Average; good	Average; good	Under	Edwin Hill, Tring Park Gar- dens, Tring
LEICESTERSHIRE ...	Good	Under	Good	Good	.....	Bad	Very good	Very good	.....	G. Milford, Egerton Lodge, Melton Mowbray
	Under; good	Under; good	Over; good	Average; good	Over; very good	Average; good	Over; very good	Average; good	Walnuts, under	D. Roberts, The Gardens, Prestwold Hall, Loughboro'
	Over; very good	Over; very good	Over; very good	Average; good	Average; good	Over; very good	Over; very good	Over; very good	Under; good	W. H. Invers, Belvoir Castle Gardens, Grantham
	Average; good	Average; good	Average; good	.....	.....	.....	Over; good	Average; good	Good	W. Kaines, Cold Overton Gardens, Oakham
NORTHAMPTON- SHIRE	Over; good	Average; good	Over; good	Under; good	Average; good	Under; good	Over; very good	Average; good	.....	W. Duncan, Bosworth Hall Gardens, Rugby
	Over; good	Average; very good	Over; good	Over; bad	Over; good	Under; very good	Over; very good	Under; bad	Average; good	H. Kempshall, The Gardens, Lampport Hall, Northampton
	Average; good	Average; good	Over; very good	Average; very good	Average; good	Average; good	Over; very good	Under; bad	.....	Robert Johnston, Wakefield Lodge Gardens, Stony Strat- ford
	Over; good	Average; good	Average; good	Over; bad	Over; good	Average; good	Over; good	Average; small	Over; good	Mr. H. Turner, Fineshade Abbey Gardens, Stamford
	Over	Average	Over	Average	.....	Average	Over	Under	Average	W. S. Miller, Whittlebury
NOTTINGHAMSHIRE.	Under; good	Under; good	Average; good	Average; good	Average; good	Average; good	Over; good	Under; good	Average; good	Amos Parr, Holme Pierrepont, Nottingham
	Over; very good	Average; good	Average; good	Average; good	.....	Over; very good	Average; good	Under; bad	Under; good	John Lyon, Home Farm, Ossington, near Newark
	Over; very good	Over; very good	Average; good	Average; good	Under; very good	Average; good	Over; good	Average; very good	Average; very good	William Robertson, The Gar- dens, Thoresby Park, Oller- ton, Newark
	Over; good	Average; good	Under; good	Average; good	Under; good	Average; good	Over; good	Average; very good	Over; good	J. Roberts, Welbeck Gardens, Worksop
	Over Good	Average Under	Over Under	Average	Under	Average Under	Over Good	Under; bad Good	Under	A. H. P., Lowdham
OXFORDSHIRE	Over	Average; good	Average; very good	Over; very good	Average; good	Over; good	Over; good	Over; very good	Average; good	P. O. Knowles, The Gardens, Friar Park, Henley-on- Thames
	Over; very good	Average; very good	Over; very good	Over; very good	Over; very good	Under; very good	Over; very good	Average; very good	Over; very good	John A. Hall, Shiplake Court Gardens, Henley-on-Thames
	Over	Under	Over; good	Average; very good	Average	Average	Over; good	Average; very good	Average	A. J. Ling, Wyfold Court Gar- dens, Reading
	Over; small	Average; good	Average	Average	.....	.....	Over; good	Average; good	Average	James A. Smith, Sarsden House Gardens, Chipping Norton
SHROPSHIRE	Over	Under	Under	Average	Average	Under	Under	Over	Average	James Loudon, The Quinta Gardens, Chirk
	Over; very good	Average; good	Average; good	Over; very good	Average; good	Under	Average; good	Average; good	Over	A. S. Kemp, Broadway, Shifnal
	Over; good	Under; good	Average	Good	Average; good	.....	Over; good	Over; good	Average	Wm. Weeks, The Gardens, Cheswarline House, Market Drayton
	Over	Under	Under	Under	Average; good	Good	Average; good	Under; good	.....	J. Hopwood, The Gardens, Hawkestone, Shrewsbury
	Average	Under	Average	Average	Average	Under; good	Over	Average; good	Under	G. Pearson, Attingham Hall Gardens, Shrewsbury

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES	PEARS	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
4. Midland Counties.										
STAFFORDSHIRE	Over; very good	Average; good	Over; good	Under; bad	.....	Average; good	Over; very good	Average; good	Over; good	Thos. Bannerman, Blithfield, Rugeley
	Over; good	Average	Average	Average	Average	Average	Over; good	Average	Average	G. H. Green, Enville Gardens, Stombridge
	Average; good	Average; good	Average; good	Average; good	Average; good	Under; good	Over; very good	Average; very good	Under; good	Geo. Woodgate, Rolleston Hall Gardens, Burton-on-Trent
	Over; good	Under; good	Over; good	Average; very good	.....	.....	Over; good	Average	Under	J. Wallis, Woore, Newcastle
	Over; good	Under; good	Over; very good	Average; good	Average; good	Average; good	Over; very good	Over; good	Over; good	Edwin Gilman, Alton Towers Gardens, Stoke-on-Trent
WARWICKSHIRE	Average; very good	Average; good	Under; fair	Over; very good	Under; bad	Under; bad	Over; very good	Over; very good	Over; very good	F. Clark, Teddesley Park Gardens, Penkridge
	Average	Under	Average	Average	.....	Average	Average	Over	.....	Thos. Bridgewater, Middleton Hall Gardens, Tamworth
	Over average	Under; good	Under; bad	Average; good	Average; good	Average; good	Under; bad	Under; bad	Under	W. Bennett, Rangemore Gardens, Burton-on-Trent
	Average; good	Average; good	Under; bad	Over; very good	Average; good	Average; good	Average; good	Under; bad	Under; bad	James Rodger, The Gardens, Charlecote Park, Warwick
	Average; good	Average; good	Over; good	Under; good	Average; good	Under; good	Over; very good	Under; bad	Average; good	H. T. Martin, Stoneleigh Abbey Gardens, Kenilworth
5. Southern Counties.	Over; very good	Average; good	Over; very good	Under	Bad	Average; good	Over; very good	Under; good	.....	A. D. Christie, Hagley Gardens, Alcester, R.S.O.
	Over; good	Over; good	Over; very good	Morelles average	Over; very good	Average; good	Over; very good	Over; very good	.....	W. Masters, Shuckburgh Gardens, Daventry
	Over; good	Over; good	Over; very good	.....	.....	.....	.....	.....	.....	J. Masterson, Weston House-Gardens, Shipston-on-Stour
	Over; small	Average; good	Average	Average	Average; good	Average; good	Over	Average; good	Average	J. Howard, Benham Park Gardens, Newbury
	Average	Under	Average	Average	Average	Under	Over; very good	Over; very good	Under	Wm. Fyfe, Lockinge Gardens, Wantage
BERKSHIRE	Over	Average	Over	Average	Average	.....	Average	Average	Walnuts good	Owen James Coombes, Englefield Gardens
	Over	Average	Average	Average	Average	Under	Over	Over	Average	Robt. Fenn, Sulhamstead, near Reading
	Average	Average	Over; very good	Average	Over	.....	Over	Average; very good	Average	J. Strachan, Rosehill House Gardens, Henley-on-Thames
	Over	Average	Over	Average; good	Over; good	Average	Over; very good	Average	Average	W. Pope, Highclere Castle Gardens, Newbury
	Over; very good	Over; very good	Over; very good	Over; very good	Over; good	Over; good	Over; very good	Average; good	Average; good	O. Thomas, Royal Gardens, Windsor
DORSETSHIRE	Over; very good	Over; very good	Over; very good	Over; very good	.....	Average; good	Average; good	Average; good	Average; very good	Thos. Denny, Down House Gardens, Blandford
	Over; good	Average	Over; good	Under	Under	Under	Average; good	Over; good	Average	John Powell, Ilminster Gardens, Dorchester
	Average	Average	Over; very good	Average; good	Average; good	Average; good	Over; very good	Average	Over; very good	T. Turton, Castle Gardens, Sherborne
HAMPSHIRE	Average; good	Under; very good	Average; very good	Average; good	Over; good	Average; good	Average; good	Over; very good	Under; very good	Samuel Heaton, County Council Experimental Garden, Newport, Isle of Wight
	Over; very good	Over; very good	Over; good	Average; good	Over; very good	Average; good	Over; good	Under; good	Over; good	Arthur Lee, Palace Gardens, Beaulieu, Brockenhurst
	Over; good	Over; good	Over; good	Over	Over; good	Average	Over; good	Over; very good	Over	Wm. Smythe, Basing Park Gardens, Alton
	Over; good	Average; good	Over; very good	Average; good	Over; very good	Under; good	Over; very good	Average; good	Over	J. W. McHattie, Strathfield-saye, Hants
	Very good	Average; good	Average; good	Average	Under	Average	Very good	Average	Good	J. Wasley, Sherfield Manor Gardens, Basingstoke
KENT	Over; good	Over; good	Over; good	Average; good	Average; small	Average; good	Over; good	Under; bad	Under	J. Bowerman, Hackwood Park, Basingstoke
	Over; good	Average; very good	Over; good	Over; good	Average; good	.....	Over; good	Under; very good	Average	Thos. Leith, Beaurepaire Park Gardens, Basingstoke
	Over; good	Under	Under	.....	Average; good	Under	Over; good	Average	.....	Noah Kneller, Mal-hanger Park Gardens, Basingstoke
	Average	Average	Average	Good	Average	Under	Over	Very good	Average	Walter Jarman, Preston Hall Gardens, Aylesford
	Average; good	Average; good	Over; good	Average; good	Average; good	.....	Average; good	Average; good	Under; good	Geo. Woodward, Barham Court Gardens, Maidstone
	Over; very good	Over; very good	Over; very good	Over; very good	Over; very good	Over; very good	Over; very good	Average; good	Average; good	Henry Elliott, The Gardens, Wildernesse Park, Sevenoaks
	Over; good	Over; very good	Average; good	Over; very good	Average	Average	Over; very good	Under; bad	Under	George Bunyard, Royal Nurseries, Maidstone
	Over	Over; good	Average	Over; good	Average	Under	Average	Under	Over; good	Geo. Hutt, Lullingstone Castle Gardens, Dartford
	Average; small	Average; good	Average	Average	Average	Under	Average; good	Under	.....	F. Moore, The Gardens, Blendon Hall, Bexley
	Average; good	Over; good	Much over	Average	Over; good	.....	Average	Much over; very good	Average	Wm. Lewis, The Gardens, East Sutton Park, near Maidstone
	Over; good	Over; good	Over; very good	Over; good	Average	.....	Over	Under; bad	Over; good	R. Cannell, Eynsford
	Over	Average; good	Over; good	Average; good	Average	.....	Over; good	Under	Average; good	Geo. Fennell, The Gardens, Fairlawn, Tonbridge
	Over; good	Over; good	Over; good	Average	.....	.....	Average	Under; bad	Average	B. Champion, Baron's Place, Mereworth, Maidstone
	Average	Average	Average	Average	.....	.....	Good	Average	Bad	George Lockyer, Mereworth, Maidstone
	Average; good	Under; very good	Under; good	Average; good	Over; good	Under; good	Average; good	Average; good	.....	Geo. Wythes, Syon House Gardens, Brentford, W.
MIDDLESEX	Very good	Average	Bad	Good	Good	Average	Average	Under	Average	S. T. Wright, Royal Horticultural Society's Gardens, Chiswick
	Over; good	Average; good	Average; good	Average; very good	Over; good	Under	Over; very good	Over; very good	Average	H. Markham, Wrotham Park, Barnet
	Average	Average	Over	Average	Average	.....	Average	Under; bad	Average	W. Bates, Cross Deep Gardens, Twickenham
	Over; very good	Average; very good	Over; very good	Average; good	Over; very good	Under; good	Average	Average; very good	Good	A. R. Allan, Hillingdon Court Gardens, Uxbridge
	Over; bad	Good	Average	Average	Good	Average	Over	Average	Good	W. Watson, The Gardens, Harefield Place, Uxbridge
SURREY	Over; very good	Over; very good	Good	Over; very good	Very good	Good	Good	Bad	Good	J. W. Miller, Ruxley Lodge, Esher
	Good	Very good	Bad	.....	.....	.....	Good	Good	Good	William Bain, Burford Lodge, Dorking
	Over	Over	Over	Over; good	Average; good	Average	Over; good	Average; good	Average	A. Dean, Kingston-on-Thames
	Over; good	Average	Average	Under	Average	Under	Over; good	Over; good	Average	T. Osman, Ottershaw Park, Chertsey
	Over; good	Over; very good	Over; very good	Average; good	.....	Over; very good	Average; good	Average; good	Over; very good	W. P. Bond, The Gardens, Gatton Park, near Reigate
	Average; very good	Average; very good	Over; good	.....	.....	.....	Average	Average	Over; very good	W. E. Humphreys, The Grange Gardens, Hackbridge, Carshalton

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
5, Southern Counties.										
SURREY	Over; good	Average; very good	Over; good	Over; very good	Over; good	Under; good	Over; good	Average; very good	Over; good	George Kent, Norbury Hall Gardens, Dorking
	Over; good	Under	Average; good	Average; good	Over; good	Under; bad	Over; very good	Over; very good	Average; good	C. W. Knowles, Bagshot Park
	Average; good	Over; very good	Over; very good	Average; under good	Over; good	Average; good	Over; good	Average; very good	Average	G. J. Hunt, The Gardens, Ashted Park, Epsom
	Over	Average; good	Over	Good	Average	Good	Over; good	Average	Good	W. C. Leach, Albury Park Gardens, Guildford
	Average	Over	Over	.....	Average	Average	Over; good	Over; good	.....	W. Wilks, Shirley Vicarage, Croydon
	Good	Good	Very good	Average	Good	Very good	Good	Under average	Very good	J. M. Runnacles, Tandridge Court Gardens, Oxted
	Average	Average	Under	Average	.....	.....	Average; good	Under	Average	C. J. Salter, Woodhatch Lodge Gardens, Reigate
	Over; good	Over; very good	Average; good	.....	.....	.....	Average; good	.....	.....	James Walker, Ham Common
SUSSEX	Average	Over	Over	Average; good	Over; good	Average	Over; very good	Average; good	Average	A. Wilson, Eridge Castle Gardens, Tunbridge Wells
	Over; good	Over	Average; good	Average	Average	.....	Over; good	Under; very good	Average	Alex. Reid, jun., Possingworth Gardens, Cross-in-Hand
	Over; good	Over; good	Average; good	Average	Over; good	Over; good	Over; good	Average	Over	E. Burbury, Arundel Castle Gardens
	Over; good	Average; good	Over; good	Under; good	Average; very good	Under	Over; very good	Under; bad	Average	W. H. Smith, West Dean Park Gardens, West Sussex
	Over	Average; good	Over; very good	Over; good	Average; good	.....	Over; very good	Average; good	Average	W. Brunson, Brambletye Gardens, East Grinstead
	Over; good	Over; very good	Over; very good	Over	Average	Average	Over; good	Over; good	Average	Geo. Grigg, Ashburnham Place Gardens, Battle
	Average; good	Under; fair	Under; good	Under; bad	Under; bad	Average; good	Average; good	Over; good	Average	H. C. Prinsep, Buxted Park Gardens, Uckfield
WILTS	Over; good	Average; good	Over; good	Average	Average; good	.....	Average; good	Average; good	.....	Josiah Trollope, Longleat Gardens, Warminster
	Over; very good	Over; good	Over; very good	Average; good	Over; very good	Over; good	Over; very good	Over; very good	Average; good	T. Challis, The Gardens, Wilton House, near Salisbury
	Over; good	Over; good	Over; good	Average; good	Average; good	Over; very good	Average; very good	Average; very good	.....	G. Brown, Bowood Gardens, Calne
	Over; good	Average; good	Average; good	Average; good	Average; very good	Average; good	Over; very good	Average; good	Average; good	E. F. Hazelton, Longford Castle Gardens, Salisbury
	Over	Over	over	Over	Over; good	Under	Over	Average; good	Average; good	Alfred Rushant, Savernake Forest Gardens, Marlborough
	Average; very good	Under; good	Over; good	Average; good	Average; good	Under; very good	Over; good	Under; very good	Average; good	W. Eatwell, Burdorp Park Gardens, Swindon
	Average; good	Average	Over; very good	Average; good	Over; very good	Average; good	Over; very good	Average; good	Average	T. Hall, Charlton Park Gardens, Malmesbury
7, England, N.W.										
CUMBERLAND	Average; good	Under	Average; good	Average; very good	Average; very good	Average; very good	Average	Average; very good	.....	A. C. Smith, Eden Hall Gdns., Langwathby, R.S.O.
LANCASHIRE	Over; good	Average; good	Over; good	Over; very good	Over; good	.....	Over; good	Over; very good	.....	W. P. Roberts, Cuerdon Hall Gardens, Preston
	Average; good	Average; good	Over; very good	Over; very good	.....	.....	Over; good	Average; good	.....	Wm. Ashton, Wrightington Hall Gardens, Wigan
WESTMORELAND	Under	Under	Over	Under	.....	Average	Over	Average; good	.....	F. Clarke, Lowther Castle Gardens, Penrith
	Over; good	Under; good	Under	Average	.....	.....	Over; good	Over; good	Average	W. A. Miller, Underley Gardens, Kirkby Lonsdale
8, England, S.W.										
CORNWALL	Over; good	Average	Over; good	Over; good	Over	.....	Over; very good	Average; good	.....	W. H. Bennett, Menabilly Gardens, Par, R.S.O.
	Over	Average	.....	Morellos over	Average	.....	Average	Over	.....	A. Mitchell, Tehidy Park Gardens, Camborne
	Average; good	Average; good	Average; good	Under; bad	Under; good	.....	Over; good	Average; good	Over; good	Alfred Read, Port Eliot Gardens, St. Germans
	Over; good	Average; good	Over; good	Under; bad	Average	Average	Over; very good	Average	Over; good	Charles Page, Boconnoc Gardens, Lostwithiel
	Average; good	Under; very good	Over; good	Over; good	Average; good	Under; bad	Over; very good	Over; very good	Average; good	A. C. Bartlett, Pencarrow Gardens, Bodmin
DEVONSHIRE	Average; bad	Over; good	Over; very good	Over; very good	Over; good	Average; good	Over; very good	Over; very good	Average; good	Andrew Hope, Prospect Park Gardens, Exeter
	Average; good	Average; good	Average	Average; good	Average	.....	Over; good	Over; good	Under	George Baker, Membland Gardens, near Plymouth
	Over; very good	Over	Over; very good	Average	Over; very good	Average	Over; good	Average; good	Over	John Garland, Killerton Gardens, Exeter
	Average; very good	Average; good	Over; very good	Over; good	Over; very good	Average; good	Over; very good	Average; very good	Over; good	James Mayne, Bickton Gardens, Budleigh Salterton
	Average; very good	Average; good	Average; good	Average; good	Average	Average; good	Average; very good	Under	.....	Richard Mairs, Shobbrook Park Gardens, Crediton
	Average; good	Over; very good	Over; very good	Average; good	Average; very good	Under	Over; very good	Average; good	.....	Geo. Foster, Glendaragh Gardens, Teignmouth
	Over; very good	Average; good	Average; good	Over; good	Over; very good	.....	Over; very good	Under; very good	Average; good	C. W. Bloye, Pinhay Gardens, Lyme Regis
	Average	Average; under	Over; good	Average; good	Over	Average; under	Over; very good	Over; very good	Over; good	T. H. Slade, Poltimore Gardens, Exeter
GLOUCESTERSHIRE	Over; very good	Average; good	Over; good	Average; good	Average; good	Over; very good	Average; good	Under; bad	.....	Geo. W. Marsh, Arle Court Gardens, Cheltenham
	Over	Average	Average; good	Average	Over	Under	Average	Average; good	.....	William Nash, Badminton Gardens, Chippingham
	Average; very good	Average; good	Average; very good	Average; good	Average; very good	Under; good	Average; very good	Average; good	Average	T. Edington, Tortworth Court Gardens, Failand
	Average	Under	Under	Average	Over	Under	Over	Under	Walnuts over; Filberts under	W. Greenaway, Dodington Gardens, Chipping Sodbury
	Average	Over; good	Over; very good	Average; good	Average; very good	Under	Average	Average	Average	W. Keen, Bowden Hall Gardens
	Average; very good	Good	Over	.....	Average; very good	Under	Over; good	Under	Filberts over; Walnuts under	J. Sowray, Highnam Court Gardens, Gloucester
HEREFORDSHIRE	Over; good	Average; good	Average; good	Over; good	Average; good	Average; good	Over; good	Over; good	Over; good	A. James, Woolstone Rectory, Cheltenham
	Over; good	Under; good	Over; good	Average; Morellos under	.....	Under; good	Average	Under	Average	Geo. Milne, Titley Court Gardens, Titley, R.S.O.
	Average; very good	Average; good	Under	.....	.....	Average	Over; very good	Average; good	Average; good	Thomas Spencer, Goodrich Court Gardens, Ross
MONMOUTHSHIRE	Over; good	Average; very good	Over; good	Average; good	Average; good	Average; very good	Over; good	Average; good	Over	Thomas Plumb, Shobdon Court Gardens, Shobdon
	Average; good	Under; good	Over; good	Average; good	Average; good	Under; good	Over; good	Over; good	Over	W. F. Woods, Llanfrechfa Grange Gardens, Caerleon
	Average; good	Average	Over	Average	Under	Average	Over	Average; good	Over	Thos. Coomber, The Hendre Gardens, Monmouth
	Over; very good	Over	Over	Over	Over; very good	Over	Over	Over	Over	H. Townsend, Maindiff Court Gardens, Abergavenny
SOMERSETSHIRE	Over; very good	Over	Over	Over	Over; very good	Over	Over	Over	Over	S. Kidley, Nynshead Court Gardens, Wellington

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
S. England, S.W.										
SOMERSETSHIRE	Over; good	Over; good	Over; good	Average; good	Average	Average	Over; good	Over; very good	Average	Thos. Wilkins, The Gardens, Inwood House, Henstridge
	Under	Under	Average	Average; good	Average; good	Average	Average; good	Average; good	Average	W. Hallett, Cheyne Cottage, Cossington, Bridgwater
	Over; bad	Over; good	Over; good	Over; bad	Average; good	Over; bad	Over; very good	Under; poor	.....	John Crook, Forde Abbey Gardens, Chard
WORCESTERSHIRE	Average; good	Under; very good	Average	Morellos average; good	Average; good	Under	Over; good	Average; good	Under	H. Russell, Hindlip Hall Gardens, Worcester
	Over; very good	Average; very good	Over; good	Average; good	Over; good	Average; good	Over; good	Average	Over	A. Young, Witley Court Gardens, Stourport
	Average; very good	Over; good	Over; good	Under; good	Over; good	Under; good	Over; very good	Over; very good	Average	F. Jordan, Impney Gardens, Droitwich
	Average; good	Under; good	Over; good	Average; very good	.....	Under; good	Over; very good	Under; good	.....	Messrs. White & Tillson, Gt. Hampton Gardens, Vale of Evesham
	Over; good	Over; good	Over; very good	Over; very good	Average; good	Over; good	Average; good	Average; good	Over; good	W. Crump, V.M.H., Madresfield Court Gardens, Malvern
WALES—										
ANGLESEA	Average; very good	Under; good	Under; good	Under; bad	Average; good	.....	Over; very good	Average; very good	.....	R. Parry, Llysdules Gardens, Amliwch
BRECONSHIRE	Average; very good	Average; good	Average	Over; very good	Average; very good	.....	Over; very good	Average; good	Average; good	C. Hilbert, Craig-y-nos Castle Gardens, Swansea Valley
CARDIGANSHIRE	Over; good	Average; good	Over; good	Average; good	.....	.....	Over; very good	Average; good	Average	G. Wright, Bronwydd Gardens, Maesilyn, Llandysil
CARMARTHENSHIRE	Average	Under	Average	Average	Average	Under	Average	Average	Average	Lewis Bowen, Edwinstford Gardens, Llandilo
	Over; good	Average; very good	Average; good	Over; good	Average; bad	Average; bad	Over; very good	Over; very good	Over; very good	W. Parker, Neuaddfawr Gardens, Llandovery
CARNARVONSHIRE	Average	Under	Average	Under	.....	.....	Average	Over; very good	.....	Allan Calder, Vaynol Park Gardens, Bangor
	Average; good	Under	Under	Average; good	.....	.....	Average; very good	Over; very good	Average	Thomas Evans, Gwydyr Castle Gardens, Llanrwst
FLINTSHIRE	Average	Under	Good	Good	Under	Bad	Good	Very good	Under	J. Forsyth, Hawarden Castle Gardens, Hawarden
GLAMORGANSHIRE	Average	Under	Over	.....	Average	Average	Average	Very good	.....	A. Pettigrew, Cardiff Castle Gardens, Cardiff
	Average; good	Under	Average	.....	.....	.....	Average; good	.....	.....	L. C. Dunraven Castle Gardens, Bridgend
	Over; very good	Over; very good	Over; very good	Over; very good	Over; very good	Over; very good	Over; very good	Over; very good	Over; very good	Richard Milner, Margam Park Gardens, Port Talbot
MERIONETHSHIRE	Average; good	Under	Average	Over; good	.....	.....	Over; good	Over; good	Average	J. Bennett, Estate Office, Rhug, Corwen
PEMBROKESHIRE	Average; good	Average; good	Average	Under	Average; good	Under	Over; good	Average; good	Average; good	W. B. Fisher, Stackpole Court Gardens, Pembroke
	Over	Good	Over	Over	Average; good	.....	Over; good	Over; good	Average	Geo. Griffin, Slebeck Park Gardens, Haverfordwest
IRELAND—										
9, Ireland, N.										
CAYAN	Over	Over	Average	Average	.....	.....	Average	Average	.....	Edward Reilly, Castle Sanderson Gardens, Belturbet
	Average	Under; bad	Average; good	Average; good	Average; good	.....	Over; very good	Average; good	Average	John Christie, Lanesborough Lodge Gardens, Belturbet
DUBLIN	Over	Over	Over	Over	Over	Average	Over; good	Over	.....	J. Doran, Clontarf Castle Gardens, Clontarf
DERRY	Average	Under	Over	Average	.....	.....	Average; good	Over; good	.....	James Lindsay, Ballykelly
GALWAY	Average; good	Under; good	Over; very good	Average; good	.....	.....	Over; very good	Average; good	Average	Thos. Dunne, The Gardens, Lough Cutra Castle Gardens, Gort
	Over; good	Average; very good	Average; good	Over; very good	.....	.....	Over; very good	Over; very good	Average; good	A. Porter, Woodlawn House Gardens, Woodlawn
LONGFORD	Over; very good	Average	Over; very good	Over; very good	Over; good	.....	Over; very good	Over; very good	Average	John Rafferty, Castle Forbes Gardens, Newtown Forbes
MAYO	Average; good	Average; under	Under; good	Under; bad	Average; good	.....	Over; very good	Average; very good	Over; very good	Patrick Connolly, Cranmore House Gardens, Ballinrobe
MEATH	Over; good	Under; good	Average; good	Average; good	Average; good	.....	Over; good	Under; good	Under	J. Moore, Summerhill House Gardens, Enfield
SLIGO	Over; very good	Under; good	Over; good	Average; good	Average; good	.....	Over; very good	Over; very good	Under; bad	Cyrus Moore, Markree Castle Gardens, Collooney
	Over; good	Under; very good	Over; good	Under; very good	Over; good	Over; good	Over; good	Under; very good	Under; bad	James E. Dawson, Lissadell Gardens, Sligo
TYRONE	Over; very good	Average; good	Over; very good	Under; good	.....	.....	Over; good	Average; very good	.....	Fred. W. Walker, Syon House Gardens, Byn Mills
WEST MEATH	Over; good	Over; very good	Over; good	Average; good	Average	.....	Over; very good	Over; good	.....	James Tricudall, Waterstown Gardens, Athlone
WICKLOW	Over; good	Under	Under; good	Under	.....	Under; good	Over; very good	Over; very good	Average; good	David Crombie, Powerscourt Gardens, Enniskerry
10, Ireland, S.										
CLARE	Over; good	Under	Over; good	Over; good	.....	.....	Over; very good	Over; good	Over; good	Wm. Clarke, Castle Crine Gardens, Six-mile-Bridge
CORK	Over; very good	Average	Over	Average	Under	Under	Over; very good	Over; good	.....	C. Price, Mitchelstown Castle Gardens, Mitchelstown
KILDARE	Over; good	Over; good	Over; good	Morellos average	Average	Under	Over; very good	Over; good	Under	F. Bedford, Straffan House Gardens, Straffan Station
KILKENNY	Over; very good	Average; good	Over; very good	Average; very good	.....	Under; bad	Over; good	Average; good	Average; good	H. Carleton, Kilkenny Castle Gardens, Kilkenny
KING'S COUNTY	Average; good	Average; good	Over; good	Average; good	Over; good	.....	Over; very good	Over; good	Average; good	T. J. Hart, Birr Castle Gardens, Parsonstown
LIMERICK	Over; good	Average; good	Over; good	Average; good	Under; bad	Under; bad	Over; very good	Over; very good	Average; good	W. A. Bowles, Adare Manor Gardens, Adare
ROSCOMMON	Over; good	Average; good	Over; good	Average	Average; good	.....	Over; very good	Average; good	.....	Terence Rogers, Frenchpark House Gardens, Frenchpark
WATERFORD	Average; good	Average; good	Over; very good	Over; very good	Average; good	.....	Over; very good	Over; very good	.....	Thomas Dunn, Strancally Castle Gardens, Villierstown
CHANNEL ISLANDS.										
GUERNSEY	Over; good	Over; good	Over; good	Over; good	Over; good	Over; good	Over; good	Over; very good	.....	C. Smith & Son, Caledonia Nursery, Guernsey
JERSEY	Average; good	Over; good	Over; good	Average; good	Over; good	Average; good	Average; very good	Average; good	.....	Edwin John Ashelford, Queen's Road, St. Helier
	Average; good	Over; good	Over; good	Over; bad	Under; bad	Under; good	Over; good	Over; very good	.....	J. C. Becker, Five Oaks, St. Saviours
ISLE OF MAN	Average	Under	Average	Over; good	Average	.....	Over; good	Over; good	.....	James Murphy, Cronkbourne Gardens, Douglas
	Average; good	Under	Average	Average	Over; good	.....	Over; good	Under; good	.....	James Inglis, The Nunnery Gardens, Douglas

EDITORIAL NOTICES.

ADVERTISEMENT should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR AUGUST.

TUESDAY, AUG. 7	Leicester Horticultural Show. Paris Exhibition (temporary Show). Kidderminster Horticultural Society's Show.
TUESDAY, AUG. 14	Royal Horticultural Society's Committee Meeting.
WEDNESDAY, AUG. 15	Eastbourne Horticultural Society's Show.
THURSDAY, AUG. 16	Swansea Horticultural Society's Show.
TUESDAY, AUG. 21	Paris Exhibition (temporary Show).
WEDNESDAY, AUG. 22	Shropshire Horticultural Society's Exhibition at Shrewsbury (two days).
FRIDAY, AUG. 24	Bradford Horticultural Society's Show (2 days).
SATURDAY, AUG. 25	Upper Strathern Horticultural Society's Show. Worsley Agricultural and Horticultural Society's Exhibition.
TUESDAY, AUG. 28	Royal Horticultural Society's Committee. Royal Horticultural Society of Ireland Exhibition. Brighton and Sussex Horticultural Society's Show (2 days).
WEDNESDAY, AUG. 29	Harpden Horticultural Show.
THURSDAY, AUG. 30	Dundee Horticultural Society's Show (3 days).

SALE FOR THE ENSUING WEEK.

FRIDAY, AUGUST 10.—Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—62.9°.

ACTUAL TEMPERATURES:—

LONDON.—August 1 (6 P.M.): Max. 67°; Min. 50°.
August 2. Fine, warm.

PROVINCES.—August 1 (6 P.M.): Max. 6°, Eastern Counties; Min., 50°, Shetland.

The Fruit Crops.

WE have an exceptionally abundant Fruit Crop to report this year, and the quality is as exceptional as the amount. Whether this is due to a thorough ripening of the wood last autumn, to the absence of spring frost, or to the currents of the Gulf Stream having been turned more abundantly than usual in our direction, we cannot say. Perhaps, as we have often suggested, we should get at the reason why if some persevering investigator would search our back volumes and throw the information yearly given about the Fruit Crops into some statistical and comparative arrangement. Of course, the records are incomplete—some are purely local, whilst others include the surrounding districts accessible to the reporter. The particulars as to climate, altitude, shelter, and soil are not given, and they are so numerous and so varied, that accurate conclusions derived from those particular points could hardly be arrived at. Still, setting details apart, our records are now ample enough to allow of general inferences being drawn, and we should gladly help anyone with a taste for statistics who would endeavour to extract from the long series of reports some general conclusion. The number of the reports and the wide area (the whole of Great Britain and Ireland) from which they are collected, would serve to counterpoise the errors and imperfections, and enable a fair average to be arrived at.

In the appended summary some of the main features are brought prominently under view; thus, in the case of England and Wales, the

details for Apples show 88 "average" crops, 118 cases in which the crop was "over" average, and 7 only in which the crop was deficient. Compare this with last year's figures, when 97 were recorded as "average," 17 as "over" average, and no fewer than 134 as "under" average.

Taking Pears in England and Wales, we find 104 recorded as "average," 48 "over," while in 61 there was a deficiency. Last year, the corresponding figures were 47 "average," 5 "over"; while in no fewer than 194 cases the crop was reported deficient.

The reports relating to Plums are 73 "average," 108 "over," and 31 "under;" whilst last year the "averages" were 37; only 2 were "over," and as many as 199 "under."

The record for Cherries shows that 118 reporters have noted an "average" crop; 55 mention one above the average, and 30 below. Last year the figures were 100, 56, and 69 respectively, so that the difference between the two years is not great.

Small fruits have been, and are, generally abundant; and even Peaches have yielded a fair crop on walls outside.

In the case of Strawberries, the crop has been generally bad, and the fruits were often damaged, and their flavour ruined by rain and unpropitious weather.

We could not collect this information without the willing co-operation of our correspondents throughout the Kingdom. For the most part, the same observers have recorded the state of the fruit crops in our columns in each successive year over a long period, so that their information is the more valuable. To them, on behalf of ourselves and of our readers, we tender our hearty thanks.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records...	(61)	(57)	(58)	(60)	(70)	(28)	(61)	(10)	(10)
Average	4	1	20	37	20	10	15	3	3
Over	13	21	55	17	7	6	46	21	2
Under	5	35	10	6	2	12	—	2	5
Number of Records...	(213)	(213)	(212)	(203)	(167)	(164)	(200)	(213)	(105)
Average	5	104	73	118	96	73	56	108	91
Over	115	48	108	55	55	56	121	58	11
Under	7	61	31	30	11	4	2	47	21
Number of Records...	(27)	(27)	(25)	(27)	(10)	(10)	(27)	(27)	(11)
Average	10	10	6	15	9	2	3	5	5
Over	17	7	17	8	7	2	21	16	2
Under	1	10	2	4	8	6	1	8	4

IRELAND AND CHANNEL ISLANDS.

ENGLAND AND WALES.

ROYAL BOTANIC GARDEN, PERADENIYA.—

Our Supplementary illustration shows another view in the famous Ceylon garden, which in many points rivals the garden at Buitenzorg in Java. The present director, Mr. WILLIS, is anxious to offer as great facilities for scientific research, and the study of economic plants as are afforded in the celebrated Javanese garden. The photograph was kindly forwarded by Mr. H. F. MACMILLAN, the curator. A descriptive account of the garden is given in our columns June 23, of the present year.

TECHNICAL EDUCATION.—In the United States, says Prof. Chandler, there are 64 colleges of agriculture, 100 schools of chemistry, 480 universities and colleges, and 43 technical schools; also 89 schools devoted to engineering. It is not surprising to be told that the Americans are far ahead of the English in the application of science to manufacturing industries.

MÖLLER'S DEUTSCHE GÄRTNER ZEITUNG.—

We notice that the issue of this periodical for July 14 contains an illustrated article on the German Floral Exhibition, held in June, in Frankfurt on Maine, and an account of the exhibition of Roses held by the Society of German rosarians at Treves, as well as some shorter notes and miscellaneous matter. The whole paper being quite up to its usual average of interest.

DOUBLE FERTILISATION.—We have already alluded to the important discovery of Guignard, that a double process of fertilisation takes place—the union between the spermatozoid and the nucleus of the oosphere giving rise to the embryo, the conjugation of the other spermatozoid with the polar nucleus giving rise to the perisperm. Mr. Guignard's researches were first made with monocotyledons, but latterly he has been investigating Dicotyledons, and comes to the conclusion that the process is universal.

THE PRUSSIAN HORTICULTURAL SOCIETY

AND THE PARIS INTERNATIONAL EXHIBITION.—

We learn from a circular, sent out by *Der Verein zur Beförderung des Gartenbaues in den Preussischen Staaten*, that on the proposal of the landscape gardener, Mr. BRODERSEN, it was resolved by the united committees on July 16 that German horticulturists should make a journey to Paris in a party, or at the least make joint visits to the exhibition, as well as to celebrated parks, gardens, and nurseries in and near Paris, so as to create an interest in French horticulture among German gardeners. The time chosen for the visit coincides with the great horticultural show, which will be held in the glasshouses of the International Exhibition on Sept. 12, and the entire journey there and back will occupy twelve days; those persons who intend to commence their journey from Berlin will start on Sept. 10. In the event of a sufficient number of the fellows of the society taking part in the visit, members of other important horticultural societies of Germany will be invited to accompany them.

PARMA VIOLETS.—According to a recent issue of the *Revue de Viticulture*, the Parma Violet is simply an improved variety of the sweet Violet, *Viola odorata*. As the Violet cannot bear the full summer sunshine, it is grown under the Olive trees. The plantations are made either in autumn or in winter, in soil that has been previously well worked; the young plants, formed by division of the old clumps, are set at from about twelve to sixteen inches apart each way; they are frequently hoed and weeded, and in autumn are manured with sesame-cake. The harvest is at the maximum about the third year, and the plantation is destroyed in the sixth year. Usually the yield is estimated at over 13 cwt. per two acres of Violets; as to price, which four years ago was 4 francs, this summer it has been but 2½ francs. Italy having for some time sent in great quantities to the market at Grasse, it is to be feared

it will not rise again. The gathering of the Violets is the work of women and children, who pick off the bloom and not the peduncle, a long and somewhat costly task, as a woman, paid 1½ franc, cannot gather more than 8 lb. 13 oz. of Violets a day. The Tuberoses, imported into France from India about 1632, is cultivated in the environs of Toulon, at Ollioules, and in the neighbourhood of Grasse. A plantation lasts for two years. The harvest is from July to October, and the flowers are sold to the perfumers for making extracts and pomades at from 1½ franc to 4 francs per 2 lb.

CHERRY "NOBLE."—We have received a fine sample of fruit of this new Cherry from Messrs. W. RAY & Co., Mount Pleasant Nurseries, Teynham, Kent. In colour the fruit is reminiscent in colour to the Morello, but the flavour is sweet and agreeable, and the flesh firm. The raisers tell us that the tree is an abundant bearer, hence very suitable for orchard planting.

FRUIT HARVEST IN THE UNITED STATES.—From the Government crop report for July, just issued, we cull the following:—*Apples*: The fourteen Apple States report a decline in the condition of trees since the last issue, but they still have the promise of an exceptionally large crop—the condition ranging from 29 points above the ten years' average in New York, to 1 point in Iowa above the averages of the past ten years. *Peaches*: The condition of the fruit is such as to give promise of a phenomenally large crop. In several of the great Peach-growing States of the South the condition was more than double the ten years' average; while in many of the North Atlantic and Central States it exceeds the ten years' average by from 25 to 75 per cent. of the 18 principal Peach-growing States. California, with a condition 6 points below its ten years' average, forms the only exception to an otherwise unbroken series of extraordinarily favourable reports. *Grapes*: The average condition of these is considerably above the ten years' average in almost every State in which viticulture is an important industry.

SUMMER DRINKS.—"Last year (says Rev. Geo. B. Charles you were kind enough to insert two or three recipes for cheap cooling drinks, especially suitable for the harvest-field. So many people have asked for information on the subject this summer, that I venture to trouble you with them again. I do not suggest that they are all that very expensive beverages would be, but recommend them as palatable, thirst quenching, nourishing, easily made, and perfectly wholesome in every way. The 'Barlikos' is especially suitable for young children as well as for adults, for the table as well as the workshop or farm.

Recipe I., BARLIKOS.—Take 2 oz. of Robinson's Patent Barley, 7 oz. of sugar, 1 lemon. Mix the barley to a smooth paste with a little cold water. Add the sugar, and the juice and thin rind of the lemon, then pour over it a gallon of boiling water. Stand till cold. Cost 3d. per gallon. Many people will prefer rather more lemon, but this is according to taste. This preparation of barley, which is known as 'Barlikos,' is also sold in packets by most grocers. This is by far the most convenient form of the beverage, being made in exactly the same way as a cup of cocoa. Full directions are given on each packet.

Recipe II., STOKOS.—Take 2 oz. of fine oatmeal, 6 oz. of sugar, 1 lemon. Mix the oatmeal to a smooth paste with a little cold water. Add the sugar, and the juice and thin rind of the lemon, then pour over it 1 gallon of boiling water. Stand till cold. Cost 2d. per gallon. More oatmeal may be used.

Recipe III., COKOS.—Take 2 oz. of fine oatmeal, 1 oz. of cocoa, 7 oz. of sugar. Mix the oatmeal and the cocoa with a little cold water into a thin batter, then add the sugar, and pour over it a gallon of boiling water. Stir while water is being added.

Cost 4d. per gallon. More oatmeal may be preferred, especially for workers. GEO. B. CHARLES, Clerical Secretary, Canterbury Diocesan C.E.T.S., 94, Oakfield Road, Croydon."

OUR IMPORT OF PLANTS, BULBS, ETC.—Twelve months since, at p. 133, Aug. 12, 1899, we furnished the reader with a concise table of imports of plants, &c., from foreign countries and British colonies and possessions. In those figures we were helped by the Board of Trade and the Secretary of the London Chamber of Commerce, the latter an institution, by the way, which is well deserving the patronage of both citizens and corporations of the great metropolis. It cannot be said that these imports constitute a very large percentage of the empire's business, or that they very greatly affect the home production. We give the figures for what they are worth, as follows:—

IMPORTS OF PLANTS, SHRUBS, TREES, AND FLOWER ROOTS,
ENTERED FOR VALUE ONLY.

Imports for four years.	1896.	1897.	1898.	1899.
	£	£	£	£
Germany	39,465	42,020	43,889	47,735
Holland	213,390	213,663	221,793	213,205
Belgium	40,271	44,780	49,872	51,641
France	46,237	41,591	49,708	54,069
Japan	12,100	18,954	18,147	21,259
United States of America	18,922	18,373	13,395	15,505
Mexico	1,816	2,204	319	1,142
Republic of Columbia ..	9,596	9,068	10,428	7,341
Brazil	3,002	3,715	6,259	9,481
Other foreign countries...	4,117	4,007	3,410	3,974
Total foreign countries	581,216	598,875	617,217	623,195
Channel Islands	7,441	10,356	10,363	14,631
Cape of Good Hope	389	317	304	230
Natal	269	1,182	514	761
British East Indies	7,266	4,786	4,865	3,022
Hong-Kong	407	2,983	174	200
Australasia	486	871	780	634
Canada	690	1,212	1,151	951
British W. Indian Islands	625	944	543	488
Other British Possessions	277	932	704	319
Total, British Possessions	17,800	23,613	19,598	21,371
Grand total	599,016	622,488	636,815	644,566

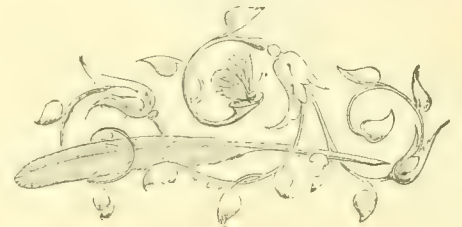
There are no figures that we can get at respecting the export of British grown plants, bulbs, &c. They are not to be had at the Board of Trade or at the offices of the London Chamber of Commerce, in St. Botolph's House, Eastcheap, in which locality, by the way, one could not the other day discover even a "buttonhole."

THE MULBERRY IN LOMBARDY.—By way of Milan we have news to the effect that the immature condition of the Mulberry foliage in Lombardy has greatly interfered with the success of the silk industry in that section of Italy. The frequent and serious variations in atmospheric conditions have been all against cocoon raising by the silkworm, and the decrease in production is placed at some ten per cent. So much for the inter-dependence of commerce and vegetation.

THE MALLER ANNUAL CRICKET MATCH.—The employees of Messrs. B. MALLER & SONS, nurserymen, of Burnt Ash Road, Lee, held their annual cricket match on Thursday, July 26, at Horn Park Farm, when an enjoyable game was played, at the termination of which foot-races and other sports were indulged in. The proceedings terminated with a hearty vote of thanks to the members of the firm for their kindness.

THE FENN TRIBUTE.—Messrs. SUTTON & SONS have contributed, through Mr. COX, the Secretary of the Reading Gardeners' Mutual Improvement Society, £10 to this fund; and Mr. ARTHUR SUTTON, £5. Mr. CHARLES ROSS, of Welford Park Gardens, has also forwarded us the sum of 10s. 6d.

CARNATIONS AND PICOTEEES AT THE ROYAL EXOTIC NURSERY, CHELSEA.—Owing to the great heat at the end of July, Carnations and Picotees in the south suffered greatly, and the duration of flowering was shortened considerably. The later blooms will doubtless be found to possess more substance and finer tints, these having opened since the welcome rains arrived. Messrs. J. VEITCH & SONS take great pains with these plants, keeping them in pots under glass during the winter, and making the soil of the beds in which the plants flower as suitable as possible, with the result that the plants thrive and flower admirably most years. As seen a week ago, there was still a great quantity of bloom on them, and visitors had ample opportunity in making selection of varieties. The liking for Picotees seems to be on the wane, only a few varieties finding favour with purchasers. Of Carnations we may mention Mrs. W. A. Reynolds, a yellow ground fancy, growing 2½ feet in height; Benbow, a fawn of a pink shade, a beautiful, regular bloom and smooth petal; Rizzio, canary yellow, very pretty; Aureola, a white ground fancy, and an excellent grower; Comet, dark crimson, dwarf in growth, with a fine smooth petal; Guinevie, a pleasing pale buff-coloured bloom, with pink edge; Agnes Sorrel, bright crimson, often seen at recent shows; Much-the-Miller, probably one of the best white varieties; Douglas Stewart, a tall grower, with nice flowers of a scarlet colour; Banner, a dwarf grower, with blooms of a brilliant scarlet; Cicelia, a fine yellow bloom, and a tall grower. A bed of Isinglass was very bright and good; the varieties Alice Ayres and Mrs. Watts are still much in request. Some fine yellow ground Picotees were noted in Heather Belle, Borderer, Alberta, Daydream, Duke of Alva, and Lady Bristol, all of which exhibited great similarity in most points.



HOME CORRESPONDENCE.

THE SWEET PEA CELEBRATION.—Permit me to call attention to two or three points in your criticism on the recent exhibition of Sweet Peas at the Crystal Palace, which appear on p. 70 of your last issue. You allude to circumstances which you suppose "might have been prevented by the Show Committee," and you particularly instance the "scarlet drapery which was suspended from the tables to the floor." You are obviously unaware this was not the choice of the committee; it was simply a case of the scarlet baize or none. The committee had to choose between naked tables, with the furniture of the exhibitors discernible underneath them, or making use of the only available drapery which could be supplied to them. It is a misfortune, from the point of view of the effectiveness of the various flower-shows held at the Crystal Palace, that the authorities make no provision for draping the tables with green-baize, as is done at [the Drill Hall and] the Royal Aquarium. The committee asked for green-baize, and they were informed it could not be supplied by the authorities of the Palace. The limited means at the disposal of the committee prevented them from hiring or purchasing the necessary green-baize, and rather than have the tables undraped, the objectionable baize was employed. With all its drawbacks, it was better than no covering at all. The committee endeavoured to neutralise the effect of the red drapery by providing sheets of green paper as a surface-covering to the tables, but only a few exhibitors made use of them. The sheets of green paper were laid out carefully upon the tables so far as could be done, and they were also distributed among the exhibitors, but unfortunately only partially used. It was the

desire of the committee to have plants placed about the tables, but they could not be supplied by the Crystal Palace Company, while the cost of hiring them by the committee was prohibitive. A very great strain was laid upon the resources of the Crystal Palace to provide the 9,000 superficial feet of tabling required to accommodate the entries, so much so that the vases of flowers had to be somewhat crowded, and only certain plants of a habit of growth difficult to obtain would have been found suitable. The cause for several tables in the best positions being left unfurnished was, the failure on the part of several exhibitors to put in appearance, and their want of consideration, shown by the fact that they did not trouble to inform the committee they would not exhibit. Every foot of space on all the tables in the nave was set out for the accommodation of entries. The engagements of the day were far too numerous and onerous to admit of any serious attempt being made to fill up the vacant spaces, while the task of moving and re-arranging the large number of vases required for the purpose would not only have been one which would have greatly inconvenienced the visitors, it really was beyond the powers of those who carried out the show arrangements, as by midday they were completely exhausted by their heavy labour, and the extreme heat of the building. With all the imperfections attending the celebration, it was one of an unique and gratifying character; and it was certainly as important, viewed from any standpoint, as any exhibition held during the past quarter of a century. *Richard Dean, Secretary.*

SWEET PEA VARIETIES.—If there are 250 varieties of Sweet Peas in commerce, it is evident that there must be a large number of inferior ones, because it would be absurd to assume that there can be 250 diverse shades of colour or markings in this undoubtedly variable flower. Why then should any one grower plead that for trading purposes he must grow them all? That cannot be maintained. All the public, who are his customers, ask is that they be furnished with the best of the respective shades of colour into which Sweet Peas are classified, and if any seedsman were to intimate that he had reduced his collection of 250 to but fifty of the best, his customers would applaud him and be thankful to him. But one great need for amateur growers who have not the resources of Trentham or Aldenham, is a much more reduced selection of the best. As few or none can grow fifty varieties even, cannot some one give a selection, say twenty of the best, and for small growers a further selection of twelve? That would be to render to intending growers real service; compelling them to make their own selection from a list of even 100 such as Messrs. Cannell & Sons kindly sent me this morning is bad enough. To have the best twenty and twelve selected for them would be valuable help. If the Sweet Pea is a flower of such immense importance in our gardens now, and a separate society for its supervision is suggested, certainly it needs no special encouragement. Cannot this supervision be satisfactorily furnished at the Drill Hall meetings by a sub-committee from the Floral Committee, to which may be added specially a few others, who being Fellows of the Royal Horticultural Society have given very marked attention to Sweet Peas? To attempt the formation of another society, or to maintain a permanent committee outside of the Royal Horticultural Society, would be to court failure. Surely every facility for intelligent oversight of Sweet Peas can be furnished readily at the Drill Hall. *A. D.*

COLLINSIA VERNA.—Certainly too much cannot be said in favour of the lovely spring-flowering *Collinsia verna*. Your correspondent "E. H." is quite correct in saying it should be sown in autumn. It is so long since I grew it, that I have got slightly mixed in my data as to its proper treatment. I think I am right in saying, however, not only "should it be sown in autumn," but it *must* be sown then, and as soon as ripe, or the seed will not germinate. I should much like to know where I could obtain a packet of such recently ripened seeds. *William Earley.*

RUSCUS ACULEATUS.—I can confirm Mr. R. McLachlan's explanation as to the use formerly made of the shoots of *Ruscus aculeatus*. My facts are derived from the same district, i.e., Essex, and not far removed from Epping Forest. When I was engaged laying out the new garden at Valentines, near Ilford, I found there a very old walk known as "The Bishop's Walk,"

entirely overarched with aged Yew trees, planted no doubt under the direction of the original owner, Archbishop Tillotson. The base of the holes of these trees had become very bare, so to improve matters two good rows of *Ruscus aculeatus* had been planted and prospered. Coming from church down the high road one Sunday, I came abruptly upon a tramp breaking out of the grounds the back way, heavily laden with a huge neatly-made bundle of this same plant, fixed to a stick upon his shoulder. I judged where he had got it, and on taking him to "The Bishop's Walk," found he had cut the whole and greatly spoiled the appearance of the bushes. It came out in court subsequently, he wanted what he had stolen to sell to tobacconists. My impression always has been that its value consists in the manner it distributes water, and that owing to the peculiar aculeate conformation of its branch growths, not that (as your correspondent suggests) it possesses any virtue in itself. *William Earley.*

STRAWBERRIES.—Whilst Mr. G. Bunyard writes somewhat pessimistically with respect to summer-fruited Strawberries, he is decidedly optimistic when referring to those that fruit in the autumn, especially to certain new ones. May I suggest that it will be well to allow a few years of trial for these to take place, ere opinions either for or against be pronounced, as it is very probable that they too may have those uncertain properties in relation to cropping, which mark their summer relatives. But seeing how wonderfully cheap and abundant Strawberries were in the market, shop, and street recently, is it quite fair to assume that because of some local failures the crop has been a poor one? I saw some splendid crops on soil of a firm retentive kind, especially where well mulched, and it is very evident the market growers somewhere had good crops also. Wherever crops were poor the great drought of the preceding year was the primary cause, and it affected all varieties alike. In relation to that undoubted cause of so much of the blindness that prevailed in plants during the spring, I would ask those who like Mr. Bunyard, Mr. Hudson, and others grow autumn fruited of the St. Joseph type largely, to note how far the great heat and drought we have recently experienced has or has not affected the production of fruiting crowns in these. It would be odd if autumn drought so harmfully affected summer fruited, and summer drought left autumn fruited unharmed. Because of the blindness which so largely prevailed amongst Strawberries this spring, especially with yearling plants, much alarm seems to have been created lest the stocks prove to be blind absolutely, I have endeavoured to allay that alarm by pointing out that the cause was not constitutional, but of a purely temporary character. *A. D.*

CATKINS ON THE BIRCH.—The common Birch here is one of the most highly prized trees on account of its grace, especially in the spring of the year, when the young foliage makes its first appearance. This tree always fruits here abundantly, which causes that sweet little bird known as the Redpole to stay with us the whole year round. I have found three nests of young Redpoles this present nesting season; and the fourth brood will soon be out. The nest is in a tree of Duchesse de Bordeaux Pear. This is the first season that I have known the Redpole to nest here. In the winter they abound and are continually searching the Birch catkins for seed. The Birch seeds and grows here without any trouble whatever, and so prolific are the catkins that the branches are quite weighed down with them. The seeding of the trees does not seem to affect the foliage in any way as "H." (Surrey Heath) describes on p. 74 of the *Gard. Chron.*, July 28, 1900. The Birch makes itself at home here, for it is growing with its roots entirely under water, and some are growing on a very high and dry hot stony soil. *Edward Coleman, North Frith Gardens, Tonbridge.*

THE CLOISTER FRUIT PROTECTOR.—The protectors of last year in celluloid stood every test of sun, wind and rain, and the colouring of the fruit under them was perfect. The protectors were subjected to the most severe tests at the Royal Horticultural Society's gardens at Chiswick, in addition to some hundreds in the hands of private experts and best known gardeners in England. The celluloid can be washed, and it lasts for years. *Rev. E. Darnley Smith, Landscope Vicarage, Ashburton.* [Mr. Smith proposes to introduce a smaller and cheaper form shortly.]

PHAIUS × OAKWOODIENSIS.

WHEN the beautiful *Phaius* × *Norman* appeared it was thought that Norman C. Cookson, Esq., of Oakwood, Wylam, Northumberland (gr., Mr. Wm. Murray), had accomplished all that was possible with hybrid *Phaius*, a class of Orchids specially worked up at Oakwood. But the use of *Phaius Humbloti* and the fine *P.* × *Cooksoni* resulted in the handsome and distinct *P.* × *Oakwoodiensis*, which secured a First-class Certificate when shown by Mr. Cookson at the Royal Horticultural Society, July 17 this year. *Phaius* × *Cooksoni*, which is still a favourite in gardens, and which was illustrated in the *Gardeners' Chronicle*, March 29, 1890, was obtained by crossing *P. Wallichii*, Lindl. and *P. tuberosus*, Blume, so that in *P.* × *Oakwoodiensis* are incorporated the fine features of three of the best and most distinct species, and by its broad and openly-displayed labellum, broader sepals and petals, and other floral advantages, it becomes the type of a new race. By reference to our illustration (fig. 23) it will be seen that the flower partakes much of the character of *P. Humbloti*. The broad sepals and petals are tinged with rose-pink on the face, silver-white lines showing between. The reverse side is tinged with purple, the midribs being white. The labellum is white at the base, and bears a prominent yellow callus in the centre. The remainder of the lip is of a bright rose-claret colour. It is said that these hybrid *Phaius* are very easy to grow and flower in an intermediate-house, and that when in bloom they are among the showiest and most lasting plants for decorative purposes in the dwelling-house, and that if properly tended the change does not injure them.

NURSERY NOTES.

MESSRS. CARTER & CO.'S TRIAL GROUNDS AT MORTLAKE.

ON the side of the main roadway from Richmond to Mortlake, and about midway between the two railway stations, the trial-grounds of Messrs. Carter & Co., of Holborn, are situated. They stretch from the road to the South-Western Railway, and occupy a rather low position. The soil is fairly light and sandy, and rests upon a gravel subsoil; it is well suited for the purpose to which it is devoted, though liable to suffer somewhat during a time of severe drought. Formerly market-garden ground, it may be said to be of a good heart; and given sufficient moisture, vegetables and flowers alike can be brought to a high state of perfection. Water is laid on, but on the occasion of our visit, the long spell of drought was being severely felt, despite the constant use of the watering-pot.

Messrs. Carter & Co. do well to invite gardeners to inspect their trials at Mortlake. It is an excellent opportunity for them to gather up a great deal of valuable information, so great is the variety found there. An observant gardener, with the aid of a note-book, can make himself acquainted with many things he would not usually find in gardens; and his opportunities for instituting comparisons are great. Let us hope they are turned to some useful purpose.

We have said the variety found here is great; there being on view ninety-nine different sample grass plots for various purposes. Each grown from a different selection of grass-seeds: grasses for lawns, cricket-grounds, tennis-grounds, &c.; selections for croquet-grounds and lawns appeared to be perfect, an even carpet of the finest grasses without a single intruder of a coarse character. There were patches of Clovers, also affording an excellent opportunity for anyone to become acquainted with their differing characters and uses. Here was a large patch of the Calvary Clover (*Medicago echinus*), with its yellow blossoms and curious dark seed-pods; for some reason there has been of late a brisk demand for seeds, probably inspired from the traditions associated with the plant. The Straw-

berry-headed Clover (*Trifolium fragiferum*) was here, grown from seed imported from New Zealand; the flowers pale pink, the seed-pods taking on a reddish colour as they ripen, and resembling a Strawberry in appearance. One Clover, known as Carter's Mammoth White, is an importation from the north, and is expected to form a valuable addition to forage plants. Close by were samples of grasses for one, two, and three years' lay, and also for permanent pasture, each representing a distinct and special mixture; there were also samples of Sainfoin, Clovers, samples of Yarrow to test their adaptability to form lawns; also of Spurrey for planting near coverts, as pheasants feed upon its round seeds, which resemble those of Hemp; a patch of the Sea Reed (*Ammophila arundinacea*), which is so much employed on the coast of Belgium under the name of Mat-grass, to resist the encroachments of the sea; and beds of grasses in considerable variety, from which can be derived some knowledge of the habits of growths of each. There

improved under culture. A very fine selection from the well-known Daisy, with longer and finer pods, was noticeable; the gain is an increased yield. A French Pea, bearing the name of Carter's Delicatsesse, is a white wrinkled Second Early, growing to the height of about 3 feet; very prolific, and bearing straight-pointed pods.

One can at once see how popular is the Duke of Albany, for here were thirty samples of this variety, all of good quality, illustrating the care taken in selecting stock seeds. A re-selected type of Duke of Albany seemed to be perfect in every respect. The Carter, a vigorous-growing Pea of the Ne Plus Ultra type was represented by two forms, one with a long curved pod, the other with a straight, blunt pod; both green wrinkled, and particularly high flavoured. These are to be sent out in the immediate future. A selected Early Telephone represented a most desirable garden Pea; its popularity was also attested by the fact that there were thirty samples of it. Telegraph,

type, but taller; an early type of this could be seen, of dwarfer growth. Danby Stratagem is a glorified form of this popular variety, very prolific, and an excellent garden variety. Carter's Anticipation is a main crop wrinkled Marrow, growing about 2½ feet, and coming into bearing early in July. It is said to be the result of a distinct cross, Ne Plus Ultra having been the pollen parent, and from which it has no doubt derived its fine quality as a table sort.

Autocrat is a very fine late Pea of much individuality of character; its dark-green, well-filled pods are decidedly distinctive. Carter's Michaelmas is held to be later still, and this has much the same character of pod, but more pointed. A robust grower, and not subject to mildew, it is a valuable late variety; so late, indeed, that in some seasons considerable difficulty is experienced in getting the seeds fully ripened, and this fact operates to make it at times a scarce variety. A Pea bearing the name of Carter's Interest, rather taller in growth than the foregoing, appeared to be the latest of all, and so, well adapted to bring up the rear of the succession. Close by was a plantation of Peas for stock; among them a selection known as Carter's Early Daisy, which comes into bearing at the same time as American Wonder, and has long full pods. Another very useful early dwarf type is Carter's Forcing, for pot culture under glass. A selection from Early Morn shapes well. A new unnamed variety for 1901 is said to be ten days earlier than Daisy, and very dwarf. The foregoing may be said to be some of the gems of the large collection; some of the last named having been later sown enabled a fair estimate to be made of their value.

A trial of garden Turnips was full of interest; one of the earliest Carter's Forcing, a long white variety, very quick to turn in. The white and purple Milans were here, also the Munich in excellent character, the red-top Mousetail, and others. Carter's Cardinal is coloured all over, resembling a Turnip-rooted Beet, the flesh white.

There were trials of Radishes also, though mainly past their best; one plot of Radishes could be seen carefully netted as far as possible from harm; it represents a stock of spotted Turnip, the surface spotted red and white, a novelty for 1901.

There is a huge trial of Tomatos, consisting of some 200 varieties. The recent rains must have proved very helpful to them.

FLOWER SEEDS.

In the way of flower-seeds, the large trial of Sweet Peas was over, the intense heat and the dry soil had materially shortened their season of flowering. Beds of *Salpiglossis grandiflora* are very fine, the size of the blooms and the range of colours being remarkable. Annual *Chrysanthemums* are very gay, forms of *C. carinatum*, double and single, the same of *C. coronarium*, also *C. segetum*, and the several named varieties of each. *Centaurea Margarita* (giant white Sweet Sultan) has exquisitely fringed and divided petals, and excellent for cutting, a distinct improvement upon the old type. Those fine forms of *Dianthus Hedebergi*, *Crimson Belle* and *Eastern Queen*, well deserve a place in the garden, the former especially, for its rich colour. There are other forms of the *Dianthus*, especially the *Imperialis* section, which are well worthy of cultivation.

Those who desire to make a study of the climbing, and of the dwarf, *Tropeolums*, with the object of discovering the best of each, have an excellent opportunity of doing so at Mortlake, all the novelties being grown there. Candytufts are very gay, the noble white *Empress*, very fine; and the dwarf white *Little Princess*, distinctly good. A variety named *Rose Cardinal*, is a great improvement upon the flesh-coloured form. In the way of Poppies, the double annual *Pæony*-flowered are fine and varied, and some of the single forms are very attractive, especially the white. There were bold patches of Improved Shirley Poppies, and also of the perennial Iceland type. As a crimson-



FIG. 23.—PHAIUS X OAKWOODIENSIS. (SEE P. 92.)

are also to be seen considerable trials of Mangolds, Carrots, &c., all full of promise, but not sufficiently advanced to determine their characters.

A remarkable trial of Peas, comprising about a thousand different samples, was full of interest, and though the main of the early varieties were over, enough could be seen to show the great care exercised in selecting stock seeds. This is one of the many advantages incidental to a trial-ground of this kind; a sample of each bulk of Peas which comes into the house during the season is taken, carefully labelled and sown; the purity, or otherwise, of any particular bulk is ascertained, and everyone showing the best quality is carefully divested of anything that is not equal to the highest merit, and in this way select stocks are secured. Every wholesale seed-house is deeply interested in the purity and high quality of its seed stocks, and a healthy competition inspires every house with a desire to procure the best possible, for on this its status in the trade depends.

Some of these Pea samples were noticeable as showing the value of selections. New Peas are frequently but selections of some popular type

the round-seeded form of Telephone, is giving place to the latter; and it is not too much to say that the round-seeded Peas, whether blue or white, are gradually giving place to the better flavoured wrinkled varieties for general table purposes, and especially so as we now have wrinkled varieties as early, if not earlier, than any round-seeded sorts.

Veitch's Perfection and Yorkshire Hero are both standard varieties of high quality much in demand; here were to be seen excellent types of them, and G. F. Wilson can be noted as a capital garden Pea. Improved Veitch's Perfection appears to be larger and longer in the pod, a very fine selection; Improved Omega shows the same advance in point of selection; so does a fine stock of Dr. Maclean. Carter's Majestic, green wrinkled, is a very fine midsummer Pea, about 3 feet in height, a free bearer, and producing large and full curved pods. Daisy is a Pea of great demand, one of those varieties which may be said to mark an epoch in Peas, setting up a type which becomes the centre of a group. Stratagem, an older variety, has a darker pod than Daisy, and, like it, is in much demand. Sharpe's Queen is of the same

flowered annual, it is difficult so beat *Malope grandiflora*. The *Lavatera* are very fine also; the dwarf blue *Convolvulus minor* is a striking mass of colour, and the forms of annual *Coreopsis* very attractive. Among the many *Clarkias*, *C. integripetala* and its allies are the best.

In the way of Mignonettes, Bismarck is the best red, and there are other reds, as well as those which have golden flowers. There are double and single forms of *Calendula*, among them the single white Cape Marigold, *C. pluvialis*. A very fine selection from *Godetia Witneyi*, of a rich shining magenta-crimson, was very striking.

Petunias are becoming very gay: among them *Adonis*, deep rose; *Snowball*, white, &c.; also some very pretty small flowers, striped varieties as we used to know them. They are much more refined than the large loose-flowered types.

Large trials of Stocks and Asters are coming on into bloom, and will well repay a visit. The Marigolds will be in flower at the same time, and a big trial of *Gladiolus*. There is also a very interesting trial of dwarf and Runner Beans, which should be seen when in pod.

DENDROBIUM × VENUS.

This beautiful hybrid, raised by Norman C. Cookson, Esq., Oakwood, Wylam, between *D. Falconeri* ♀ and *D. nobile*, when the best variety of it is seen in perfection is often pronounced to be the finest *Dendrobium*, either species or hybrid, in cultivation; and a glance at the accompanying illustration (fig. 24), taken from a plant which flowered with the raiser, Norman C. Cookson, Esq., in April and May this year, although it fails to give the size of the flowers or their rich colouring, will indicate that there is reasonable grounds for the assertion. The plant has much of the graceful habit and beautiful arrangement of the flowers seen in *D. Falconeri*, together with a flower of stouter substance, and plant of a freer habit of growth imparted by *D. nobile*, and consequently it is a fine example of the hybridist's work. The flowers are slightly more than 4 inches across; and in form they are nearest to *D. Falconeri*, but of the firmer texture of those of *D. nobile*. The sepals and petals are white as regards the lower halves, bright rose-purple on the outer portions, the tips being rather lighter in colour than the rest of the flower. The reverse side of the flower is tinted of a bright rose-purple, which is most effective, the face and the back being showy. The lip is $1\frac{1}{2}$ inch broad, and 2 inches long; the disc of claret-purple tint, with a yellow band surrounded the striated edge; the rest white, with rose-purple apex. The cross was made by Mr. Cookson in May, 1884; the seed sown July, 1885. A good batch was obtained, and the first plant flowered was described in the *Gard. Chron.*, May 17, 1890.

Another grand plant of it flowered with J. Leemann, Esq., West Bank House, Heaton Mersey, in March and April this year, when Mr. Leemann kindly sent flowers of it, together with the following particulars about the plant:—"The plant has forty-five fine bulbs, and carries now about fifty flowers, and as many buds that will soon be open."

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

Stoves.—Most flowering and ornamental foliaged plants will now need to be afforded manure-water twice and thrice a week. *Codiaeums*, *Dracenas*, *Aralias*, &c., which may be growing in small pots for use on the dinner-table, in vases or baskets, and in rooms, may need repotting in order to keep them in good condition during the winter. *Acalyphas* that have lost their lower leaves should be cut down, and the tops inserted in light sandy soil in small pots, and put into the propagating-house. Cuttings taken at this date make nice plants for use in the winter if grown on without a check. The points of the strong-growing shoots of

Nepenthes may be pinched out, and the pitchers supported by means of ties fixed to the main stem or to the basket. Let the leaves be sponged of the deposit left by water, and the baskets be soaked in a vessel of rain-water occasionally. A top-dressing of turfy peat and fresh sphagnum-moss, if carefully pressed in about the roots with a sharp-pointed stick, will keep the plants healthy and growing. The pitchers should be emptied of fetid water found in them, which sometimes causes discoloration and decay.

General Remarks.—A good stock of cuttings of *Oplismenus Burmanni*, *Tradescantias*, and *Coleus*, should be put in for winter use. Divide plants of *Isolepis gracilis* and *Carex* in variety, potting the pieces in large 60's, and in light soil. Plants of *Smilax* which may have been cut over severely may be repotted into larger pots, or planted out in a border of loamy soil in ainery or Peach-house, training the shoots on a wall or trellis, or fastening them to strings suspended from the roof. If twisted round the strings no ties are required. The young shoots of this plant are subject to infestation by green-fly, which can be kept under by syringing with rain-water. Plants of *Cinerarias* should be potted, and young seedlings pricked off into pans; also seedlings of *Humea* and *Calceolaria*, the latter being placed in light sandy soil, in frames facing north, shaded from direct sunshine, afforded plenty of ventilation, and kept as cool as possible.

Pot-Roses, *Ghent Azaleas*, and *Forcing-plants* generally, should receive weak liquid-manure alternately with clear water.

Marguerites now passed out of flower may be cut back severely, and when they have broken, they may be repotted firmly, and plunged in beds of coal-ashes, or stood outside on a coal-ash floor till the end of September. When the leading shoots have grown several inches in length the points should be nipped off, and all flowers removed at this season. Cape Pelargoniums with scented foliage succeed if grown in the open air, and they will need copious supplies of weak guano-water and soot-water alternately in hot weather. During winter the leaves of these plants are of use as a base for various flowers in glass dishes of geometrical design used in dinner-table decorations, lasting much longer than Ferns.

Indian Azaleas.—Plants whose flower-buds are set, should be placed out-of-doors in partial shade. Let the foliage be examined from time to time, and if thrips are discovered, lay the plants on their sides on a mat, and apply an insecticide; and in the case of small plants, immerse the crown in a vessel containing it. Continue the application of weak manure water. *Azaleas* should be syringed with rain-water morning and afternoon.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Imported Orchids.—The number of Orchids imported annually, and disposed of by auction and otherwise, would lead anyone to suppose that the country was being over-stocked with them. For my part it is a matter for wonder what becomes of a very large number of those that are sold. Doubtless many die, for were all to live, importations, other than those of newly discovered species, would have to be restricted greatly for several years. The cause of so many Orchids perishing is the irrational and ill-considered treatment pursued. Great anxiety to see the newly-acquired plants start into life with but little loss of time shortens the lives of the plants. They are too often subjected, as soon as received, to an excessive amount of heat and of moisture; placed in large receptacles, and afforded too much water. In most cases, newly-imported bulbous Orchids should be placed in a temperature a few degrees lower than is considered necessary for established plants of the same species; they should be kept moderately dry, and not exposed to strong sunlight, for some time after having been received. By this means the pseudo-bulbs become plump, and the leaves—if any—are retained in a healthy state. When any plant begins to form new roots, let it be freed from all decayed portions, and place it in a pot, pan, or basket, and be provided with plenty of crocks, and afforded just sufficient material at the base of the growths emitting the roots for them to strike into. Afterwards, let the plant be exposed to more sunlight, and afford it the usual con-

ditions of heat and moisture. Without generalising further, I will now treat of a few seasonable importations recently offered for sale.

Cattleya citrina.—Purchased now in an imported state, will have just the right season in which to develop its growths. When acquired, free the masses from everything that is decayed, then fix them on rafts or blocks, so that the prospective growths will be inverted as they should be. Little or no material should be placed between the masses and the rafts, and the plants should be hung in a moderately light position in a cool house. For a few weeks afterwards no water, other than that afforded with the syringe several times a day during bright weather, will be needed. When roots push forth freely, dip the rafts frequently into a vessel containing rain-water, and continue to syringe them. This kind of treatment should continue in a modified form all through the winter, till the plants produce flowers, when a prolonged rest will become essential.

Cypripedium Godefroya leucocilium, another Orchid recently offered for sale, requires careful management to establish it. The safer method is to suspend each piece in an inverted position in a moist shady part of the house for about a fortnight, by which time the healthier pieces will have become plump, and they may then be cleansed and planted in well-drained Orchid-pans, in a mixture consisting of two parts peat, one of moss, and the remainder of small clean crocks and old plaster. Let the pans hang in a moist, shady spot in the East Indian-house, and afford water with moderation, observing that not any remains in the axils of the leaves. During the winter months dryness at the root is best for this species.

Cypripedium insigne.—Each piece should be put into pots of a suitable size, crocks alone being used, the final potting operation being performed when the plants are making roots. A stage in an intermediate-house that will hold moisture, and rather dense shade, are suitable conditions for the present. There being no moisture-retaining peat or moss, water may be supplied daily by means of a rose water-can. When the roots appear, some of the crocks may be removed, leaving a depth of about $2\frac{1}{2}$ inches to be filled in with equal parts of peat, sphagnum-moss, and a small quantity of the turfy parts of loam, with the fine soil knocked out of it. Just sufficient water should be applied as will keep the compost moist. The drooping leaves should be tied to small stakes, to enable the plants to be placed close together.

Laelia albidia, which have been imported lately in quantity, may be stood upright on a moist stage in the Mexican or *Cattleya*-house until roots form, and then be planted in equal parts of peat and sphagnum-moss, in Orchid-pans provided with wires for suspending the latter. Having no leaves to lose, the plants need no deep shade now, or when they are growing. Afford them water sparingly, and only when the materials are dry.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Hints on Work.—Few gardeners have too much vegetable-ground, and double cropping is the rule, which makes it difficult to afford the soil due preparation for the next crop. As has been mentioned, winter green-crops succeed on soil that is of moderate fertility, and especially is this the case with late-planted ones. Land that has carried several crops in succession, with perhaps light dressings of manure, should be heavily dressed with rotten farmyard-manure, and deeply trenched. The ground which will carry the crop of *Tripoli Onions* should also be well dressed with rich manure, and deeply dug. The Onion thrives in an open situation, and on a soil that is light rather than heavy. Heavy soils should be deeply dug, and left untouched till in a fit state to be worked. The haulm of the second early crop of Potatoes may now be cut off, and Kales planted in the furrows. Should hot weather continue, Runner Beans, although a mulching has been applied, will require one good application of water in a week, and it will benefit the plants if the foliage be moistened every evening.

Coleworts of the first sowing may be planted in dull or rainy weather, following an early Potato-crop or aged Strawberries; manure being applied or withheld as may seem necessary. In rich soil, Coleworts make quick growth, and turn-in earlier

than those planted in unmanured ground. The richer the soil, the greater the distance apart at which to plant the London and Rosette varieties—15 inches being the maximum. A heavy dressing of freshly-slaked lime should be incorporated with the soil, as a preventative of the attacks of the grub and wireworm. The seed-beds of the successional sowings should not lack water.

Transplanting.—Towards the middle of May, sowings of Celeriac and Leeks were made, and the plants should now be ready for planting out. The ground prepared for these crops should be trampled evenly and made smooth, the Celeriac being planted in shallow drills drawn at 2 feet apart, and a distance of 1½ foot being allowed from plant to plant. Late Leeks should be planted in trenches dug out at about 2½ feet apart, and at 9 inches from plant to plant. Leeks are seldom grown for use in the early autumn, but if they are so grown

morning. The Apricot-border must be well moistened throughout, and in dry land a mulch over the roots is a great aid to that end. Should wasps abound, provide forthwith a counter-attraction to the toothsome fruits in the form of sweetened beer in suspended bottles; and let search be made for the nests of the wasps and destroy them.

Peaches.—The fruits of Waterloo and Early Alexander having been consumed in most gardens in the warmer counties, the trees should be relieved of all useless wood, and the foliage afforded a good washing with soapsuds and flowers-of-sulphur. The fruits of later varieties should be exposed so as to ensure high colour in them. If the fruits have been thinned to the proper number, these will attain to a fine size, providing manure-water and clean water be applied to the border. If the rapid ripening of any variety is desired, place one or more frame-lights in front of the tree, and make

American Brambles.—If the young shoots have been thinned out, those remaining may now be loosely fastened to their supports until the crop of fruit is gathered, when they can be properly laid in and made secure. These Brambles are in this garden cropping abundantly, for about two-thirds of the length of last year's canes, and the current year's growth is very satisfactory. Applications of water, and a few hours later of manure-water, will be of great benefit to the plants. Once this is done, and a mulch of stable-litter placed on the surface, the soil may be drenched with weak liquid-manure as often as may be necessary.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Hchester, Abbotsbury Castle, Dorsetshire.

Bedding Plants.—The following plants may now be struck from cuttings, viz., *Ageratum mexicanum* varieties, *Heliotropes*, *Pansies*, *Violas*, *Verbenas*, *Petunias*, and many more half-hardy and tender plants used in the flower-garden, such as *Alonsoas*, *Mesembryanthemums*, *Abutilons*, *Daturas*, &c. The cuttings should be inserted in clean cutting-pans, or singly in pots, according to size, and be placed on a close stage in an intermediate temperature, and covered with hand-glasses or cloches and bell-glasses; the soil used in the cutting-pans should be light and sandy, and the cuttings must be shaded from strong sunshine. When they have made roots, let them be potted singly into 60's, and they will make strong plants before the winter arrives. *Verbenas* especially should be thus treated, being subject to mildew if crowded together; and strong plants, well established early in the autumn, always withstand this pest better than later struck plants. The tips of the stronger shoots and all flower-buds should be removed.

Scented-leaved and Cape Pelargoniums, and bi-color and tricolor varieties, may be struck as cuttings in a border if treated similarly to rock-plants, as advised in last week's calendar. They may also be struck singly in small 60's, using good leaf-mould, together with a sprinkling of pulverised cow-manure and road-grit, or sharp sand; such may be put close together in a cold frame, and sprinkled frequently in hot weather. In either case, the cuttings must be shaded from bright sunshine with light scrim or tiffany.

The Reserve Garden.—Every large garden should possess a plot of good ground for the purpose of getting up a stock of plants from seed, cuttings, and divisions of hardy plants used in bedding. And all beds and borders therein should be dressed when vacant with charred garden refuse, road scrapings, and leaf-mould, so as to be fit for the reception of plants. When thus kept in good heart, there is no more useful part of the garden.

Roses.—The shoots of *Roses* that have flowered should be cut back to two or three good buds, and the blind and useless shoots removed from the middle of the heads, a proceeding which tends to encourage late flowering and to increase the vigour of the plants. Mulching with half-decayed stable-manure is also beneficial to the plants, as are copious applications of liquid-manure.

Climbers.—Let all weakly and flowerless growths be removed, and let the strong growths remain free from ties, &c., for a few weeks, so as to ripen them thoroughly before making them secure against the wind.

Anemons and Ranunculus on heavy or cold soils should be lifted and put to dry in an airy shed, spreading them thinly in shallow trays. When matured, the tubers will appear shrivelled and leathery, and may then be placed in powdered charcoal, and kept till the early winter or spring.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Pineapples.—At this season a good stock of suckers can usually be found of a size fit for removal from plants that have borne fruit. Carefully wrench them from the stock, and pot singly in 32's, using an open, friable loam, to which a small quantity of bone-meal, sand, and charcoal, are added. The drainage of the pots should be good, and let them be plunged in a bed of fresh fermenting material, duly prepared, and free from rank steam. The bottom-heat should not exceed 80°, and water should be applied very sparingly to



FIG. 24.—DENDROBIUM X VENCs. (SEE P. 94.)

they will soon require the first earthing up, which should be carefully carried out in the same manner as Celery is dealt with.

Early Potatoes.—As soon as the roots that were left in the ground for seed purposes are ripe they should be lifted without delay, as when left in the ground after a long spell of heat, they are apt to start growth again if wet weather ensue, besides being liable to become diseased. The best mode of storing these early tubers is to put them in layers about 6 inches deep; or, better still, in single rows on the floor of a cool room or dry cellar till they have got green. Potato haulms should be burned without delay.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Apricots.—The fruits should now be exposed to sunshine, and means taken to trap woodlice and earwigs, until the crop of fruit is gathered. The best sorts of traps are made from dry Bean-stalks, reeds, or Bamboos, and stuck behind the branches, blowing the insects out and destroying them every

fast to the wall. Let the foliage be syringed daily till the first fruits begin to soften, and when the fruits are consumed, remove the lights. Particular attention should be paid to the varieties Royal George, Crimson Galande, Magdala, and Violette Hâtive Peaches, and to Lord Napier Nectarines, which under fair cultivation attain to a large size, great depth of colour, and the perfection of flavour.

Morello Cherries.—Wall trees should be examined for the last time before putting fish-nets over them. Before the nets are put on, the young shoots should be laid in, and the trees syringed with clean water. Some gardeners allow these shoots to grow out from the wall, so as to hold off the nets, but this is not good practice, as by the time the nets are taken off, they have got very firm and set at the base, and are then difficult to train into their proper positions. It is better to train them in now, and peg the nets down to the alley about two feet from the base of the wall, and then a few forked sticks placed here and there among the branches will suffice to keep the nets at a distance away from the fruits. Bushes in the open are suffering from the drought, and stand greatly in need of water at the root.

the suckers till roots form. They should be shaded from the direct sun's rays, and bedewed over with the syringe twice daily. When well rooted, afford air freely, and grow-on in moderate temperatures in order to induce sturdy growth. A selection should now be made of the stoutest succession-plants with a view to preparing them for early fruiting next season. These should be afforded somewhat cooler treatment than the general stock, and plenty of space for the foliage. A rather dry course of treatment will bring about the desired result, but the soil should not be so dry as will affect the health of the plants. The plants with swelling fruit may be afforded manure-water liberally, and a humid atmosphere maintained during the bright hours of the day, sprinkling the plants lightly on hot days, and permitting the temperature to run up to 95° at closing time. Those plants which are in flower should be afforded dry atmospheric conditions, and as soon as the flowering is over, let them be top-dressed with a rich loamy compost, removing at the same time some of the lowermost leaves.

Melons.—Except under very favourable conditions, it is now time to plant Melon-plants for the last crop. The beds of fermenting material should be carefully prepared, as also the soil, it being difficult to maintain great vigour in the plants unless this be done. The plants should have been grown on without check from the first. The soil should consist of three-quarters turfy loam and one-quarter decayed manure. Place a shovelful of old mortar rubble or charcoal under each plant. When planted, keep the lights close, and shade for a few days, and when the roots begin to run in the compost, force the plants along with high day temperatures, closing early in the afternoon to maintain a temperature of 80° to 90°, but in the evening allow a fall to 65° or 70°, which may remain steady during the night.

Cucumbers.—Seeds for the production of plants for winter supplies should be sown at this date, keep the plants close to the glass after germination, and never allow them to become dry at the root, or pot-bound; otherwise red-spider may infest them, and greatly affect their growth. Plants recently put out in beds will require the growths to be frequently stopped and regulated, and strong growth induced by the application of turfy-loam and leaf-soil to the surface of the beds; manure-water being afforded when the plants come into bearing. Plants coming in bearing should not be overcropped at this season. Fire-heat may be necessary during dull weather in order to maintain a temperature of 75° to 80° by day, and 70° at night; and the plants should be syringed twice daily. If black aphid appear, fumigate the plants lightly and often.

Figs.—When the second crop of fruit is cleared, the trees should be cleansed with the syringe and clear water, and if mealy-bug is found on them, the cleansing operations will have to be carried out during the next two months. Syringe the trees often with insecticides, and use XL-ALL. Remove gross and other useless shoots. To ensure the maturation of the shoots, dry conditions should prevail by day, and cool ones at night. A moderate degree of moisture in the soil will bring about a cessation of growth.

Succession-houses.—As the fruit in these houses will be ripening, a drier atmosphere, especially during the night, should prevail, and the syringing of the trees omitted. Ventilate the house early in the day, and damp down once or twice on sunny days. Let the moisture evaporate before closing the house.

THE APIARY.

By EXPERT.

Sections.—These should receive very careful attention, particularly as in the south and west of England, most beekeepers are aware, the time is passing very quickly, only the hives now remain for them to gather from. As soon as full sections are taken off, the sections partly filled should be placed in the front, and newer ones placed in the hives, and thus enable the bees to fill the sections which they have commenced. It is very tiresome to find say a dozen sections only partly filled, and therefore unsaleable. But this can be avoided by carrying them to the front; and then filling the vacant spaces with pieces of board or carpet, so as to confine the bees to the sections alone. If bees are allowed to get to work on vacant spaces, not only

is a loss of honey caused and the sections left unfinished, but a great deal of trouble is involved in getting the spare combs away before reaching the sections. And, once more, be careful that all the sections are kept upright when taken from the hives, and to keep them in this position. Stocks that have done honey-gathering should be looked to, and a careful look-out kept for bees that can be driven a little later on to strengthen weak hives; and let the old queen be taken away and another introduced, it being far better to reduce your stock and have better results, than to keep a lot of hives for show purposes only. In cases where bees are destroyed, now is the time to run around to your neighbours and enquire of them before the bees are promised to some one else, or destroyed. The present year has been so bad for bee-keeping that the price of honey is sure to go up, and it behoves every bee-keeper having good sections to be careful and not give them away, because honey being scarce, however good the season may prove to be, it is certain to be valuable.

Wax Moths.—A sharp look-out should be kept for these pests, which seem on the increase, and all carpets, quilts, &c., taken away and thoroughly cleansed, or new ones placed in their stead. The watchful bee-keeper should examine the tops of the frames, as these are often infested with the moth; and all comb as soon as possible should be made into wax, or be stored away with a little naphthaline to prevent the moths from infesting it. A tin should be kept for all small pieces of waste comb to be placed in, melting it down as soon as there is enough collected to make it worth the while.

BRITISH EMPIRE PEA.

THIS is a handsome main-crop, tall-growing Pea, of a deep green colour, and good flavour. As shown at the Drill Hall by Messrs. W. W. Johnson and Co., Ltd., it was seen to be very prolific. Our illustration (fig. 25) shows that wrinkled and round Peas occur in the same pod. Messrs. Johnson were awarded a silver-gilt Knightian Medal for their collection of Peas, the highest Award, as we are informed, for any collection of Peas exhibited.

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 31.—The Drill Hall, Buckingham Gate, Westminster, was again well furnished with exhibits on Tuesday last, when there was an ordinary fortnightly meeting of the Committees. The commencement of the holiday season had an effect upon the attendance of visitors, which was less than has been the case for some time past. There were few Orchids shown, but a further exhibition of paintings by Miss ROBERTS was made, including specimens that could not be shown on the last occasion owing to the want of space. These paintings have given much satisfaction, as the illustrations are very faithful. The Orchid Committee has shown its appreciation of them by recommending the award to Miss ROBERTS of one of the Society's Gold Medals.

The ORCHID COMMITTEE also recommended the award of one First class Certificate, two Awards of Merit, and three Botanical Certificates.

The FLORAL COMMITTEE recommended awards to two Nymphaeas, a hybrid Hedychium, two tuberous-rooted Begonias, and a strain of Pentstemons.

There were many exhibits before the FRUIT and VEGETABLE COMMITTEE, but no award was made to a novelty.

According to the "Arrangements," published by the Society a Silver Flora Medal was offered for the best collection of Cactaceous plants from an amateur, but there was not one shown. A group of 170 varieties was staged by Messrs. YOUNG, Stevenage.

In the afternoon a lecture upon "Cherries and Plums in Pots" was given by Mr. H. SOMERS RIVERS, of Sawbridge-worth.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. Eugen Seeligmüller, Chas. T. Drury, H. B. May, R. Dean, G. Reuther, Jas. Hudson, J. Jennings, J. F. McLeod, J. D. Pawle, Geo. Gordon, Chas. E. Shea, E. H. Jenkins, W. J. James, H. J. Jones, E. T. Cook, J. Fraser, and W. Howe.

Allocasias are among the most handsome of ornamental stove foliage-plants. MESSRS. WILLS & SEGAR of South Kensington had a group which included the following varieties: A. Rodigasiana, Mrs. Martin Cahuzac, Montfontainensis, Lowi grandis, Thibautiana, Sanderiana, argyrea, Watsoni, Sedeni,

crystallina, and the well known A. metallica. These had all been cultivated in the heart of London, and were distinctly creditable (Silver Flora Medal).

Begonias, from Mr. THOS. S. WARE, LTD., Feltham, Middlesex, were shown in very praiseworthy condition. The varieties were all of the tuberous-rooted section, and most of them double-flowering ones. We particularly noticed the following as being exceedingly attractive:—Miss Irene Lever, pink; Sir Thomas Acland, scarlet; Mrs. Andrew Tweedie, white; Golden Queen of England, rich yellow; Miss Alice Tait, yellow; Miss Mary Pope, white; Mr. Samuel Pope, white, or pale cream, with narrow margins rose colour; Mr. Dunbar Wood, orange colour; and Jubilee Queen, white. Two additional varieties will be found mentioned under "Awards." Of single-flowered varieties, Miss Nellie Thackeray and Mr. Harry Webb—the former yellow, and the latter crimson—were good (Silver Flora Medal).

MESSRS. WEBB & BRAND, Saffron Walden, showed grand double-flowered Hollyhocks, both spikes of blooms and cut blossoms, upon boards. In all, there were thirty-two varieties. The seed was sown in June last year, and the young plants put out in August (Silver Flora Medal).

Pentstemons were displayed by Messrs. DOBBIE & CO., Rotherham, N.B., and Orrington, Kent. The brilliant flower-spikes represented a very large-flowered strain, extremely varied in colour. One of the largest was Madame Furtado Heine, with white throat and rose margins. The strain was recommended an Award of Merit.

MESSRS. WALLACE & CO., Kilnfield Nurseries, Colchester, exhibited Liliun auratum Crinum, L. Kramerii, L. longiflorum, Crinum, Powellii, and C. P. album, Delphinium Zaili, a variety with pale sulphur-coloured flowers, produced on long spikes; several good Gaillardias, and other species.

Streptocarpus from Messrs. J. LAING & SONS, Forest Hill Nurseries, London, S.E., illustrated their "multiflora" strain, which may be recommended as free blooming, and possessing attractive blossoms in several distinct colour variations.

MESSRS. BARR & SONS, King Street, Covent Garden, London, W.C., had a group of cut flowers in which herbaceous Phloxes in variety were a feature; and flowers of Marliac's Nymphaeas shown in pans of water, were interesting, viz., N. Marliacea alba, Ellisiana, rich crimson; chromatella, pale yellow; Robinsoni, Laydekeri in several varieties, and others. The blooms were of such sizes as indicated successful cultivation of these popular and handsome aquatics. The exhibit further included bunches of hardy flowers (Silver Banksian Medal).

A group of cut flowers of Carnations, Montbrietias, Sweet Peas, Gladiolus The Bride, Magnolias, and other garden flowers of equal beauty, was shown by Lord HILLINGDON, Hillingdon Court, Uxbridge (gr., Mr. A. Allan) (Silver Banksian Medal).

MESSRS. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, who frequently exhibit the beauties of choice flowering shrubs, had sprays of Clethra canescens, the very fine Hydrangea quercifolia, Magnolia grandiflora Exmouth variety, Eucryphia pinnatifolia, Aesculus macrostachya, with Pavia-like flowers; and Ligustrum japonicum elegans, a variegated variety of much elegance. Each of these are worthy every recommendation to intending planters.

MESSRS. A. W. YOUNG & CO., Stevenage Nurseries, Herts, had a collection of succulents, said to represent 174 distinct varieties. The plants were small, but most of them good specimens. Also a very good display of hardy herbaceous flowers, inclusive of a considerable number of species (Bronze Banksian Medal).

MESSRS. HILL & SONS, Lower Edmonton, London, made a very extensive exhibit of Ferns in pots. They were arranged upon the floor, and consequently it was possible to display good specimens of Nephrolepis acuta, Cyathia insignis, Dicksonia antarctica, Alsophila excelsa, and other large growing species; Adiantum elegans, Gymnogrammas in variety, Asplenium nidus avis, and other species were included in this extensive exhibit (Silver-gilt Flora Medal).

MESSRS. W. PAUL & SON, Waltham Cross Nurseries, Herts, made a grand exhibit of herbaceous Phloxes, in large bold bunches. Of whites, Fiancée, Diamond, Purity, and Albatre were noticed, the first named being perhaps best. The richest coloured of them all was Coquelicot, and Etna is only a little less showy. Le Mahdi was the best purple variety; and in addition may be mentioned Pantheon, pink; Adonis, a rather lighter shade in same colour; Beranger, bluish; and Madame A. Denis, white with rosé-coloured eye (Silver Flora Medal).

Gladiolus from Messrs. KELWAY & SON, Langport Nurseries, Somerset, created a glorious display of colour. There were something like 120 varieties, the spikes strong, and the flowers large (Silver-gilt Banksian Medal).

MESSRS. JONES & SONS, Shrewsbury, made an exhibit of Sweet Peas in vases, which were arranged on a white cloth, and the front of the table being draped with green baize, the exhibit had a very pretty effect (Silver Flora Medal).

Campanula isophylla Mayi has never been shown to better effect by Mr. H. B. MAY, Dyson's Road Nursery, Upper Edmonton, London, than on this occasion. There were staked specimens like little pyramids, and others with some of the shoots staked erect, and others drooping far below the suspended pots. They were arranged in a very effective manner, plenty of space was given to each plant, and every shoot bore numerous flowers, which are rather flat, of considerable size, and of a pretty delicate pale shade of mauve colour. The exhibit was certainly one of the most attractive features in the hall, and everyone admired this new Campanula, which was figured in the *Gardeners' Chronicle*, August 12, 1899, p. 157. A useful sport from C. x Balchiniana, and several species, were also displayed (Silver-gilt Banksian Medal).

MESSRS. W. CUTBUSH & SON, Highgate Nurseries, London,

showed a pretty group of Ivies in pots, in which a large number of variegated and green-leaved varieties was included (Silver Banksian Medal).

Mr. AMOS PERRY, Winchmore Hill, London, N., had a group of hardy flowers, a conspicuous feature in which were some fine spikes of *Yucca filamentosa*. *Spigelia marylandica* is a rare North American plant, with long, tubular red flowers, with yellow segments; it grows about 1 foot high, and requires deep shade. *Stokesia cyanea*, a species that usually blooms in November, was shown in flower, and we noticed a fine spike of *Asclepias tuberosa*. *Statice latifolia alba* is a new variety of much elegance, suitable for the same uses as the *Gypsophila paniculata*. *Azalea occidentalis*, with numerous white fragrant flowers, was shown in 3-inch pots; it is a good dwarf-growing *Azalea*, but the flowers last only a very brief period when cut (Silver Banksian Medal).

Exacum macranthum, a Gentianaceous annual requiring stove or intermediate temperature, and possessing rich blue-purple flowers 2 inches or more across, with showy yellow stamens, was shown capitally by Mr. WELBORE ELLIS, Hazelbourne, Dorking (gr., Mr. W. S. Barrell). There was a nice group of the plants, and they showed very successful cultivation (Silver Banksian Medal).

Mr. JAS. DOUGLAS, Edenside Nurseries, Gt. Bookham, Surrey, exhibited blooms of very choice border Carnations, including *The Naiad*, yellow; *Nox*, crimson; *Monarch*, yellow ground with heavy rose-flaked; *Daniel Defoe*, yellow with pale rose edgings, &c.

Mr. F. C. FOWLE, Chrysanthemum Nursery, Teignmouth, S. Devon, showed blooms and plants of a border Carnation named *May Stiles*, with rose-coloured blooms; also a yellow ground border variety named *Mrs. Prince*.

Carnation *Major Harbord* was a fine yellow variety, shown by Mr. W. ALLAN, Gunton Park Gardens, Norwich.

Awards.

Begonia Mrs. Andrew Tweedie.—A tuberous-rooted variety, having white Camellia-like flowers with delicate lemon shading in the centre. From Mr. T. S. WARE, LTD., Feltham, Middlesex (Award of Merit).

Begonia S. T. Wright.—A very beautiful double-flowered tuberous variety, orange colour or salmon-red. The blossoms have very fine petals. From Mr. T. S. WARE, LTD., Feltham (Award of Merit).

Hedychium F. W. Moore was shown by Mr. F. W. MOORE, Glasnevin Botanic Gardens. It is a hybrid from *H. coccinea* and *H. coronaria*, and the splendid truss shown bore very numerous large blossoms, with lemon ground colour, shaded buff (First-class Certificate).

Nymphaea Martiana rubro-punctata.—A very showy variety, with large, intensely red coloured flowers. From L. DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. J. Hudson) (First-class Certificate).

Nymphaea sanguinea.—Flowers large, and deep crimson in colour, and possessing numerous orange-coloured stamens. From LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House Gardens, Acton.

Pontederica strain.—Messrs. DOBBIE & CO., Orpington (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, H. M. Pollett, J. T. Gabriel, F. J. Thorne, W. H. Young, H. A. Tracy, H. J. Chapman, E. Hill, T. Rochford, T. W. Bond, W. Cobb, J. Colman, C. Winn, and J. Gurney Fowler.

An interesting feature at the meeting was a display of the coloured drawings of those Orchids which had received First-class Certificates or Awards of Merit since January, 1897, and which now amount to about 400.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), was awarded a Silver-gilt Flora Medal for a group of rare and splendidly grown Orchids, in which were the fine *Cattleya* × *Whitei*, Wigan's variety, with four flowers; *Lælio-Cattleya* × *Pallas*, with four fine flowers; a grand plant and fine variety of *L.-C.* × *Atlantica*, *L.-C.* × *Aurora*, *Lælia* × *Olivie*, *Cattleya* × *Hardyana*, *C. Aclandiae nigrescens*, and other showy Orchids.

Messrs. B. S. WILLIAMS & SON, Victoria and Paradise Nurseries, Upper Holloway, staged a group made up of good plants of *Cattleya Warscewiczii imperialis*, *C. Leopoldi*, a fine example of *Lælio-Cattleya* × *Henry Greenwood*, *Cypripedium* × *Harrisianum superbum*, *C. × lo superbum*, *C. × macropterum*, *C. × selligerum majus*, and *Platyclinis filiformis*.

Messrs. THOS. CRIPPS & SON, Tunbridge Wells, showed a group of very finely-grown *Disa grandiflora*, bearing about twenty-five spikes of fine scarlet flowers.

DE B. CRAWSHAW, Esq., Rosefield, Sevenoaks, again showed his *Odontoglossum* × *Hallio-crispum* *Crawshayanum*, varying from the original, which was raised and exhibited by Norman C. Cookson, Esq., in 1896.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), showed *Cattleya* × *Hardyana*, Rosslyn variety, a very handsome form, which on this occasion demonstrated the instability of the flowers of hybrids, the one flower having the orange-veined lip of *C. aurea*, and the other exhibiting the yellow blotches on each side of the lip as in the other parent, *C. Warscewiczii*. Mr. PITT also showed *Cattleya Gaskelliana* *Lemoniana*, a charming bluish-white form, with a slight purple marking on the lip; and *Lælio-Cattleya* × *Broomfieldensis*.

F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent an inflorescence of *Angraecum caudatum* and other interesting Orchids.

JOHN T. GABRIEL, Esq., Palace Road, Streatham Hill, sent a pretty form of *Phaius bicolor* with coppery-yellow sepals and petals, and white labellum marked with rose at the margin.

A. H. SMITH, Esq., The Grange, Hackbridge (gr., Mr. Humphreys), showed the singular *Bulbophyllum Sandrianum*.

Mr. WM. RICHES, Stamford Hill, showed a good form of *Lælio-Cattleya* × *elegans*.

Awards.

Cattleya × *F. W. Wigan* (*Schilleriana* × *aurea*), from Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young).—A very fine hybrid, of the general appearance of *C. × Whitei*, but exhibiting the characters of *C. Schilleriana* in a more marked degree. Sepals light rose, tinged with bronzy-yellow; petals rose colour. Lip purple on the side lobes, yellow in the centre, the front rose, with purplish-crimson veins (First-class Certificate).

Cattleya × *poepaphylebia* (*intermedia* × *superba*), from Sir FREDERICK WIGAN, Bart. (gr., Mr. W. H. Young).—One of

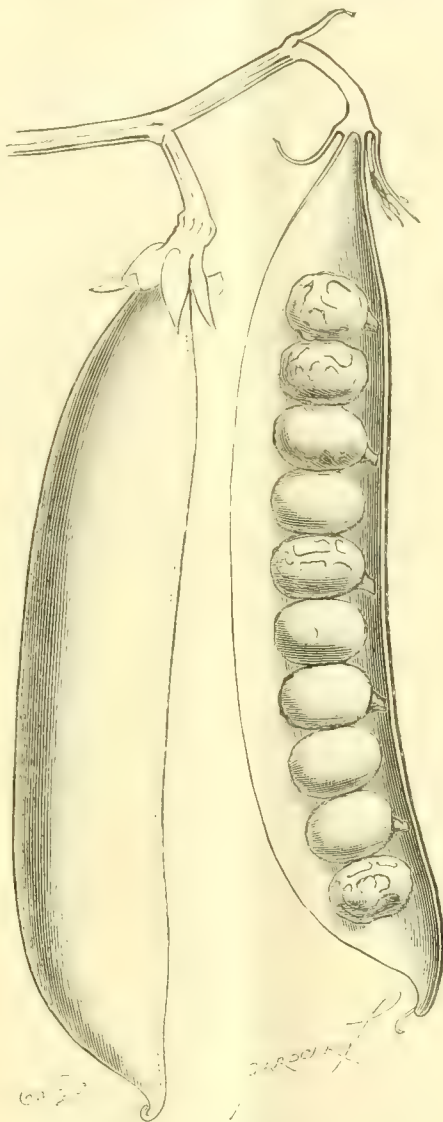


FIG. 25.—BRITISH EMPIRE PEA: BRIGHT GREEN.

(SEE P. 96.)

the hybrids raised by Messrs. Jas. Veitch & Son, and flowered in 1885. Sepals and petals white, tinged with lilac; front of lip crimped, and veined with purple (Award of Merit).

Lælio-Cattleya × *Remula* (*L. tenebrosa* × *C. Aclandiae* ?).—A very distinct hybrid of medium-size growth, from Messrs. JAS. VEITCH & SONS, Chelsea. Sepals and petals yellowish, tinged with brown. Lip white at the base and side lobes, front lobe broad, veined and tinged with dark rose; the margin being nearly white (Award of Merit).

Odontoglossum cruentum, from F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin.—Flowers small, yellow and brown, and with some resemblance to those of *O. cristatum* (Botanical Certificate).

Cyrtopogon plantaginea, from F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin.—Sepals greenish, petals white, forming a hood over the column; lip white, with purple markings (Botanical Certificate).

Phaius bicolor, from J. T. GABRIEL, Esq., Streatham Hill.—Sepals and petals bronzy-yellow, lip yellow at the base, the front white, with light rose markings at the edge (Botanical Certificate).

Fruit and Vegetable Committee.

Present: Philip Crowley, Esq., Chairman; Jos. Cheal, W. Poupard, A. H. Pearson, A. F. Barron, Geo. Kelf, W. Wilks, A. Dean, S. Mortimer, W. Bates, Jas. H. Veitch, Geo. Wythes, F. Q. Lane, Jas. Smith, Ed. Beckett, J. Willard, Geo. Bunyard, E. Shaw Blaker, H. Somers Rivers, and H. Esling.

Cherry "Noble" was given an Award by the Fruit Committee last year, and on this occasion Messrs. W. RV & Co. exhibited a fine lot of fruits, as well as branches bearing fruits showing exceptional free cropping qualities. The fruits are like those of the Morello, but larger, very firm, and perfectly sweet. It would make an excellent variety for supplying to market, as the quality is good, the fruits large, attractive, and such as would travel well.

Elaeagnus longipes, branches bearing fruits, as well as a palatable preserve made from them, were shown by Messrs. R. VEITCH & SONS, Exeter.

Early Victoria Apple, a green kitchen variety, was shown by Messrs. CROSS & SON, Wisbech.

Mr. W. ROUELL, Harvey Lodge, showed fruits of Juneating, Mr. Gladstone, and Red Astrachan Apples, grown within a short radius of Charing Cross (Vote of Thanks).

Fruits of *Rubus leucodermis* were shown by the Rev. W. WILKS, M.A., Shirley Vicarage, Croydon.

Several seedling Melons were shown for Certificates, but none was successful. One fruit exhibited weighed 13 lb., and was generally considered to be larger than desirable.

Mr. O. THOMAS, Royal Gardens, Frogmore, showed six fruits of *Melon Princess*, a variety from Shamrock × Sutton's Pink Flesh. The seedling had scarlet flesh and the fruits were of average size, and attractive in appearance. Tomato Waterloo was also shown from Frogmore; it is a variety from Dwarf Champion × Frog. Selected. It appears to be a good cropper, and the deep red fruits, which are of considerable size, are best perfection type in regard to form.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, made a grand exhibit of Gooseberries, inclusive of 100 varieties. Each of the two new varieties raised by this firm, and known as Langley Beauty, large yellow, and Langley Gage, small, pale-coloured fruits of exceptional flavour, were splendidly represented. There were also noticed amongst the yellow, green, or white-fruited varieties Prince Arthur, Early Sulphur, Mount Pleasant, Pretty Boy, Catherine, Pilot, Rumbullion, the richly-flavoured Whitesmith, London City, Langley Gage, Sir S. Brown, Bright Venus, Green Walnut, Pitmaston, Green Gage, and Golden Gem. The old Lancashire Lad, Lord Audley, London, Warrington, Highlander, Whinham's Industry, and others were conspicuous among the red-fruited varieties. Messrs. VEITCH also showed a cross between the Raspberry and Blackberry; it was named The Mahdi, and was from Raspberry Belle de Fontenay and the Blackberry. It is interesting, but possibly not more useful than either of its parents. Excellent fruits of the Logan Berry were also exhibited, and of La Versailles Red Currants, and of Black Currants, Black Grape, and Lee's Prolific; also white Dutch Currants. Strawberry The Khedive, from Lord Suffield × British Queen, also from Messrs. VEITCH, had a nice flavour, and the fruits, which were rather small, were much pointed in shape (Silver-gilt Knightian Medal).

LORD GERARD, Eastwell Park, Kent (gr., Mr. Walters), exhibited a nice collection of fruits, including two fine Melons. Of Grapes there were eighteen bunches, representing the varieties Black Hamburg, Muscat of Alexandria, Madresfield Court, and Foster's Seedling. There were also Peaches, Cherries, and dessert Tomatos. Of several dishes of Nectarines, the variety Lord Napier was shown best, the others being small in size (Silver-gilt Knightian Medal).

Lecture.

ON CHERRIES AND PLUMS IN POTS.

In the afternoon a lecture on the cultivation of Cherries and Plums in pots, was given by Mr. H. Somers Rivers, a son of the late Mr. T. F. Rivers, of the Sawbridgeworth Nurseries, Herts, and whom we are glad to see maintaining the traditions of his firm.

After explaining the kind of house used for the cultivation of Cherries at Sawbridgeworth, Mr. Rivers went on to say that as soon as the fruits have been gathered, the trees are removed from the house to the open air, and plunged nearly to the rim of the pots. Water is given them when necessary, and they are occasionally syringed overhead. In October they are again removed to the orchard-house, to be prepared for forcing. They should be repotted if necessary into a compost of good loam and rotted manure, to which some old mortar-rubble should be added.

Repotting is generally necessary only in alternate years, and when this has to be done, the trees are taken out of the pots, and the soil taken away from the ball of the plants, until the older roots are reached. Some of the younger roots are removed entirely, and the trees are then ready for transference to the new pots. When repotting is not done, the trees are top-dressed instead, previous to which as much of the old soil from the surface and sides as can be removed is taken away. Usually an 11-inch pot is sufficient in size for a tree three years old; and, if necessary, a pot one size larger may be given each time it is repotted, but 18-inch pots should be the maximum size used.

The trees will need but little water after they are repotted, and none during November or December. In February the trees may be pruned, but some of the older ones having made next to no growth, will not require this attention; but young shoots should be cut back to five or more eyes. The pots are plunged into the border of the houses, and under the base of each pot is placed a bed of

cinders. The house should be fumigated as a prevention of aphids, &c.

When the stoning stage has been passed, the fruits may be thinned, and finally the bunches may contain from six to sixteen or twenty fruits each.

A single flow and return hot-water pipe will suffice to protect the trees from spring frosts. Water must be given very carefully until the leaves are developed. When watering the roots of the trees, damp also the path, to induce a moist atmosphere.

Liquid-manure will be needed twice a week after the fruits have commenced to swell, and two top-dressings with manure, or a very rich compost may be given; the first when the fruits have finished stoning, and the second when they commence to colour. The shoots may be pinched back to eight or ten leaves. Black-fly must be combated, and even during the flowering stage the house could safely be fumigated with the XL-All vaporiser. In giving a selection of varieties for cultivation in pots, Mr. Rivers said that Early Rivers was an ideal Cherry. The fruits are black, very sweet, and will hang one month after ripening. As the audience were invited to taste this Cherry, they had an excellent opportunity to appreciate its delicious quality.

PLUMS.

The details in the cultivation of the Cherry in pots, said Mr. Rivers, were also those needful in the case of Plums. Indoors, where they are safe from the birds, Plums will hang very long, especially the late sorts, and when they shrivel they become bags of honey. A selection of varieties was quoted, and their season of ripening given, commencing with Stint, Early Prolific, Czar, and Oullin's Golden Gage, and ending with Primate, and Rivers' Late Orange. Mr. Rivers added that the Japanese Plums had not yet proved themselves to be of much use for cultivation in English gardens.

A few remarks were made by Mr. G. Bunyard of Maidstone, and Mr. Roupell.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JULY 19.—Present: Messrs. G. S. Ball, W. B. Upjohn, Chas. Parker, J. Robson, P. Weathers (Hon. Secretary). As is always the case at this time of the year, there was a small meeting, and only a few plants were brought before the committee.

Messrs. CHARLESWORTH & Co. exhibited a very good form of Cattleya Eldorado, which received an Award of Merit.

T. BAXTER, Esq., Morecambe (gr., Mr. Robert), staged a few Odontoglossums, two of which, viz., O. Coradinei var. pallida, and a good form of O. Pescatorei, Oakfield var., received Awards of Merit.

Mrs. BRIGGS, Bury, Accrington (gr., Mr. Wilkinson), exhibited Cypripedium Lawrenceanum Hycanum, Bank House var., a very good form (First-class Certificate).

JOHN COWAN & Co., LTD., Gateacre Nurseries, staged a very handsome lot of Dendrobium Phalenopsis var. Schroderae, for which a Silver Medal was awarded. At this time of year, a group as good as this one would be very hard to find.

Mr. J. ROBSON received a First-class Certificate for Lælio-Cattleya x Admiral Dewey, Robson's var., a very noble and handsome hybrid, with a rich velvety crimson lip. P. W.

READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

JULY 24.—The annual outing of the above Association was held on the above date, and proved a great success. The outing took the form of a river-trip to Henley, when, by the kind permission of F. C. Crisp, Esq., and Mrs. Noble, visits were made to Friar Park and Park Place. The party included the President (C. B. Stevens, Esq.), Messrs. Fry (Chairman), and Hinton (Vice-Chairman). A special privilege, which was greatly appreciated, was the opportunity of inspecting Mrs. Noble's wonderful collection of foreign birds. The ramble ended, and tea partaken of, the boat started for Reading, which was reached about 9 p.m. The arrangements made by the Hon. Sec. left nothing to be desired.

ROSE SHOW AT CARLISLE.

JULY 24.—The Carlisle and Cumberland Horticultural Society held an exhibition of Roses and other flowers and fruit in the Public Markets in that city on the above date. The show was strikingly pretty and successful, for it was helped not only by gardeners at mansions in various parts of Cumberland, but by displays from Messrs. DICKSON & SONS, Dublin; and Messrs. D. & W. CROLL, Dundee; and stands of Roses, plants, &c., on exhibition from Messrs. LITTLE & BALLANTYNE, Knowlfield; Messrs. CLARKE BROS., Scotch Street; Messrs. E. F. FAIRBAIN & SONS, Edentown; Mr. HUGH DICKSON, Chester; Messrs. CROLL, Dundee; Messrs. KERR BROS., Dumfries; and Messrs. LAING & MATHER, Kelso, added much to the appearance of the show.

The finest twenty-four H.P., distinct, were shown by the Rev. J. H. PEMBERTON, of Romford. Each Rose stood up leaf and bright, without imperfection, each one a study in itself. There were remarked very fine blooms of Francis Michelson, Comtesse de Luttre, Carmine-red, large; Marie-Rady, Ulrich Brunner, Caroline Testout, Danmark, Kaiserin Augusta Victoria, Comte de Bismarck, Mrs. John Laing,

Etienne Levet, Ethel Richardson, Duchess of Bedford, Marie Baumann, rich carmine crimson; Charles Lefebvre, velvet, shade crimson; E. Y. Teas, Mrs. John Laing, Ulrich Brunner, and A. K. Williams. In his fifteens, twelves, and sixes, Mr. PEMBERTON was equally successful.

Local gardeners were more to the fore in the herbaceous classes, and those for Carnations, Begonias, table plants, and in the fruit section.

It can be imagined what a fine display of Roses the professional growers made when it is stated that there were five entries in the class for seventy-two hybrid perpetuals, distinct varieties, six in the class for thirty-six blooms, five in the class for twenty-fours, and so on.

The collections of herbaceous plants were worthy of more than passing notice. In one class, for tables 6 feet by 3 feet, Judge STRAVERSON's gardener had arranged a charmingly varied table of Iris and other Lilies, Delphinium, blue and yellow Violas, &c.

Numerous ladies entered the competition for baskets of Roses, and it was won by Miss ADA BENDLE, who had made tasteful use of five varieties of blooms and buds; the Misses SALE being 2nd and 3rd.

NATIONAL CHRYSANTHEMUM.

JULY 25.—On the above date a party numbering 150 persons, composed of some of the officers and members of the Society, paid a visit to Halton, Tring, on the invitation of ALFRED C. DE ROTHSCHILD, Esq., by whom they were most hospitably entertained.

Leaving Baker Street station by special train, on the Metropolitan Railway, at 10.30 a.m., the party was conveyed to Wendover, where conveyances were waiting to proceed to Halton. Dinner was served in a spacious tent in the grounds, Mr. PERCY WATERER in the chair.

During the afternoon, visits were made to the Swiss Chalet and other parts of the grounds, then followed tea, and an inspection of the glasshouses and the gardens about the residence of Mr. R. C. Sanders, the gardener at Halton. The return journey was made at 8 o'clock, and Baker Street reached by half-past nine. It was one of the most successful outings held by the Society, and though the heat was great, there were pleasant and cooling currents of air on the high ground above the mansion.

BRISTOL AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.

THE monthly meeting of the Association was held at St. John's Parish Room, Redland, on Thursday, July 23, when a large number of members was presided over by Mr. A. J. Hancock. The subject for the evening was "Sweet Peas," opened by Mr. J. C. House, of Coombe Nurseries, Westbury-on-Trym.

In opening the subject he paid a tribute to the efforts of Mr. H. Eckford, of Wem. Mr. House claimed for Sweet Peas an attractiveness and usefulness for all forms of floral decoration, to be found in hardly any other flower, and gave very clear details as to the methods of culture likely to secure the best results, urging the need of planting thinly, freely, and in well-manured ground. He also gave many useful hints as to sticking, applying water, and shade, closing with a list of the varieties he thought the best for ordinary and exhibition culture. Mr. House's lecture was much appreciated, and a vote of thanks to him for his attendance was carried by acclamation.

NEWPORT AND MONMOUTHSHIRE HORTICULTURAL.

JULY 26.—This Society held its annual show in the King Hill Field, Newport, Monmouthshire, on the above date, and favoured by fine weather, plenty of exhibitors, and the efforts of an enthusiastic secretary and committee, it resulted in a great success.

PLANTS.

Flowering Plants of the Stock and Greenhouse were as usual excellently shown by Mr. J. CYPHER, of Cheltenham, who was an easy 1st with six specimens, viz., Stephanotis floribunda, Bougainvillea glabra, Erica Irbayn, Allamanda nobilis, Stauzia profusa, and a Kalosantes. W. J. BUCKLEY, Esq., Ten-y-lar, Llanelly (gr., Mr. Carpenter), who was 2nd, had smaller well-flowered plants of Ixora Birdgei, Francisca calycina major, &c.

In a class for four plants, Col. WALLACE, Chesterholm, Newport (gr., Mr. Powell), was a good 1st, with Eucharis grandiflora, Clerodendron Balfouriana, Allamanda nobilis, and Rondeletia speciosa major. J. PICKFORD, Esq. (gr., Mr. Taylor), who was 2nd, had excellent Anthurium Scherzerianum, Allamanda nobilis, and Dipladenia splendens.

Foliage Plants.—Mr. CYPHER was again 1st amongst four exhibitors for six ornamental foliage plants, with fine specimens of Chamaecyparis angustifolia and Queen Victoria, Kentia Belmoreana and Fosteriana, Cycas undulata, and Latania borbonica; W. J. BUCKLEY, Esq., was again 2nd, with good Codiaeums, Palms, &c.

Eleven exhibitors staged in a class for six table plants, and competition was close. Dracenas, Codiaeums, Palms, and Aralias, being the plants chiefly utilised. Dr. S. THOMAS, Clytha Park, Newport (gr., Mr. Lewis), was placed 1st; and C. H. BAILEY, Esq., Stelvio, Newport, 2nd.

Classes were provided for Ferns, Gloxinias, Petunias, Orchids, zonal Geraniums, Caladiums, Achimenes, Begonias, and others; and many excellent subjects of this description were staged.

Groups.—These were splendidly exhibited, forming a fine feature of the show. For one placed within a circle 11 feet in diameter, W. J. BUCKLEY, Esq., was deservedly 1st, with a light, graceful arrangement, consisting chiefly of Humeas, Palms, Codiaeums, Dracenas, Eulalias, and Ferns, Cattleyas, Cypripediums, Dendrobiums, and tuberous-rooted Begonias, edged with Fittonias and Oplismenus Burmanni; C. H. BAILEY, Esq., was 2nd, with a similar although slightly more heavy arrangement.

For a group arranged in semicircular form, and covering 50 square feet, four contestants engaged, and here Col. WALLACE was adjudged 1st, with a number of tastefully-arranged plants, including Palms, Codiaeums, Dracenas, and Coleus, enlivened with Orchids, Lilies, and other flowering subjects, fringed with Adiantum capilla-veneris, and blue Lobelia, and having a background of cork, draped with Lycopodiums, Caladium argyrites, Ferns, &c.; the 2nd prize fell to Mr. ANSALDE, of Cardiff.

TABLE DECORATIONS.

A tent was devoted to these classes, which were open only to ladies. The tables were round, and laid for eight persons, and a very attractive display was made. Amongst seven competitors, Mrs. FIRBANK, of Glenisk, with a pretty arrangement of Cattleyas and Yellow Iceland Poppies, relieved by Gypsophila paniculata, and Myrsiphyllum, and lighted by fairy lamps under glass shades, was placed 1st; Mrs. EARLE MARSH coming 2nd, with a patriotic display of red, white, and blue, the colours being found in scarlet Pelargoniums, white Sweet Sultan, and Sweet Peas and Delphiniums, Adiantum fronds being used as a foil to the blossoms; Mrs. WOODCOCK was a good 3rd.

CUT FLOWERS.

Roses, Hybrid Perpetuals, twenty-four distinct.—Mr. S. TRESEDER, Cardiff, showed excellently in this class, and was 1st, his best blooms were Her Majesty, Duke of Wellington, Duchess de Morny, M. E. Y. Teas, Marie Baumann, Auguste Rigotard, Earl of Dufferin, and Marchioness of Londonderry; Mr. CROSLING, Penarth, was a good 2nd, with Mrs. J. Laing, Her Majesty, Marchioness of Downshire, Ulrich Brunner, Alfred Colomb, Helen Keller, &c.

Teas, twelve distinct.—Here again Mr. S. TRESEDER took the lead, with good blooms of Maman Cochet, The Bride, Maréchal Niel, Comtesse de Nadailac, Madame Hoste, Medea, &c. Mr. CROSLING was a close 2nd, with Hon. Edith Giffard, Ernest Metz, Anna Olivier, Catherine Mernet, amongst his best blooms.

Sweet Peas were effectively staged in a space 9 feet by 3 feet. Messrs. S. TRESEDER, R. CROSLING, and BASHAM of Bassaleg, being the successful exhibitors; and with Carnations and Picotees, Mr. WILLIAM TRESEDER, of Cardiff, was 1st, with splendid blooms, several fine seedlings being remarked amongst them.

Miscellaneous.—The classes devoted to fruit and vegetables were well filled with exhibits of average quality. The trade exhibits were amongst the best features of the show, and of these Mr. BASHAM, of Bassaleg, filled the centre of a tent with heavily-fruited trees of Apples and Pears growing in pots, Cordon Gooseberries in much variety, and a miscellaneous collection of plants. Mr. HEATH, of Cheltenham, had a collection of Orchids, and a group of choice tuberous-rooted Begonias, certificates being awarded to Begonia Mrs. Pilling, a large double-flowered white; Mrs. Percy H. Harris, a fine double-flowered Primrose; and Mons. Fossatt, double-flowered blush-white.

A large and splendid lot of border Carnations was shown by Mr. WILLIAM TRESEDER, of Cardiff, who gained Certificates for Mrs. H. O. Fisher, fine scarlet self; Lady Morel, yellow, fine; and Lady Hill, large apricot flake. T. C.

MIDLAND COUNTIES CARNATION AND PICOTEE.

AUGUST 1.—This exhibition was held in the Botanical Gardens, Edgbaston, Birmingham, and bright but refreshingly cool weather prevailed after mid-day. As usual, a large company came to see the blooms. It was generally thought to be the best exhibition ever held by the Society. The entries were unusually numerous, and the blooms were of high quality. The white-ground bizarre and flaked Carnations lacked size and substance; the fact that they are the earliest to bloom caused them to suffer severely from the high temperature which prevailed during the second and third weeks in July. The white-ground Picotees were decidedly superior, and the yellow-grounds and fancies, with the selfs, really superb.

There was a large and keen competition in all the classes for cut blooms. The chief honours were taken by the Birmingham growers, Messrs. R. C. CARTWRIGHT and A. W. JONES, as representing the amateurs; and Messrs. TOMSON & Co., A. R. BROWN, and R. SYDENHAM, among the traders. The Sydenham Amateurs' Challenge Cup was again won by the holder, Mr. R. C. CARTWRIGHT, and becomes his absolute property. The Midland Counties Challenge Cup competition for traders was won by Mr. A. W. JONES, and he becomes the holder for the next year. A fuller report will appear in our next issue.

PEONY "In the Province of Suchue, near to Chungking, grow certain flowers called Mentang, in high esteem amongst them, and therefore called the King of Flowers. It differs very little in fashion from the European Rose, but is much larger, and spreads its leaves further abroad. It far surpasses the Rose in beauty, but falls short in richness of scent. It has no thorns or prickles, is generally of a white colour, mingled with a little purple, yet there are some that are yellow and red. This flower grows upon a bush, and is carefully cherished and planted in all gardens belonging to the Grandees for one of their most choice flowers." *An Embassy from the East-India Company of the United Provinces to the Grand Tartar Cham, Emperor of China, 1669.*

Obituary.

MRS. BARLOW.—The death of this lady, at Shimdda-hir, Llandudno, on the 25th ult., at the age of 73 years, is announced. Those who had the pleasure of a personal acquaintance with the late Samuel Barlow, formerly of Stakehill House, Middleton, and visited him in his lifetime, will have kindly remembrances of the genial hospitality shown them by Mrs. Barlow, on the occasions of not a few memorable floricultural gatherings.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period July 22 to July 28, 1900. Height above sea-level 24 feet.

1900.		DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				RAINFALL.	TEMPERATURE OF THE SOIL AT 9 A.M.				LOWEST TEMPERATURE ON GRASS.
JULY 22 TO JULY 28.	AT 9 A.M.		DAY. HIGHEST.	NIGHT. LOWEST.	AT 1-foot deep.	AT 2-foot deep.		AT 4-foot deep.				
	Dry Bulb.								Wet Bulb.			
SUN. 22	W.S.W.	60.6	62.8	79.5	58.6	...	70.8	65.9	59.9	58.3		
MON. 23	W.N.W.	72.4	66.0	84.0	67.3	...	71.5	65.9	60.1	65.5		
TUES. 24	W.S.W.	78.0	69.5	87.2	59.8	...	72.3	66.3	60.3	52.7		
WED. 25	S.S.W.	80.0	68.5	91.7	58.4	...	72.7	66.7	60.5	51.0		
THU. 26	W.N.W.	73.1	62.5	79.8	59.2	...	73.5	67.2	60.7	58.0		
FRI. 27	E.S.E.	73.7	62.3	77.8	61.3	0.53	72.5	67.3	61.0	52.3		
SAT. 28	S.S.W.	65.7	63.1	76.3	60.8	...	69.5	66.9	61.2	58.2		
MEANS...	...	73.2	65.0	82.3	60.8	0.53	71.8	66.6	60.5	56.6		

Remarks.—The very hot weather during the first part of the week culminated in a heavy thunderstorm on the 27th, when about one-half inch of rain fell; it has been much cooler since that date.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending July 28, is furnished from the Meteorological Office:—

"The weather during this week was again dull and rather rainy in the north-west of Ireland and over Scotland; else, where it continued very fine and dry until Friday, when severe thunderstorms occurred over England and some parts of Ireland. Very heavy rains and thunderstorms were experienced also at many of the Irish stations on Saturday.

"The temperature was still higher over the greater part of England than during the preceding week, and again exceeded the average in all districts. In England, E., the excess was as much as 9°, and in the Midland Counties and England, S., 8°; while it ranged from 6° in England, N.E. and S.W., to 2° in Scotland, N. and E. The highest of the maxima were registered on the 25th in most parts of England, but on irregular dates over Ireland and Scotland. They were as high as 92° in England, E. (at Cambridge), 91° in England, S. (in London), and 89° in the Midland Counties; they varied from 84° in England, N.E. and the Channel Islands, to 75° in Scotland, W., and 72° in Scotland, N. The lowest of the minima were recorded, as a rule, on the 27th, and ranged from 60° in the Channel Islands, and 55° in

England, S., to 41° in Ireland, N. The minima over England were unusually high, especially during the earlier part of the week.

"The rainfall exceeded the mean, in Scotland, E. and over Ireland, but was less than it elsewhere. During the early morning of Saturday, the fall over Ireland was very heavy, amounting to 2.14 inches at Phoenix Park, Dublin, 1.87 in Dublin City, and to more than an inch at some other stations. At Killybeg, the fall (which occurred later in the day) amounted to 2.23 inches.

"The bright sunshine was considerably in excess generally, but in defect over Scotland and the north of Ireland. The percentage of the possible duration ranged from 42 in England, E., and 49 in England, S., to 38 in England, N.E., 34 in Ireland, S., and between 17 and 25 in Scotland.

CATALOGUES RECEIVED.

ELLWANGER & BARRY, Mount Hope Nurseries, Rochester, N.Y., U.S.A.

J. M. THORNBURN & Co., New York, U.S.A.—Trade List of American Tree and Shrub Seeds, &c.

HEED BROS., Penrith, Bulbs, &c.

ROBERT SYDENHAM, Tenby Street, Birmingham—Carnations, Plectes, &c.

ROBERT BOLTON, Watton, Carnforth—Sweet Pea Seeds.

GERBUDER VAN VELSSEN, Blumisten, Overveen, Haarlem—Holland, Bulbs, &c.

H. HENKEL, Darmstadt.—New varieties of plants.

DICKSON, BROWN & TAIT, 43 & 45, Corporation Street, Manchester.—Bulbs.

T. MITCHELL & SONS, 15, Princes Street, and Leith Walk, Edinburgh.

BULBS.

SMITH & MENZEL, Aldgate, South Australia.—Hardy ornamental Trees and Shrubs, Herbaceous Plants and Seeds.

MESSRS. CANNELL & SONS, Swanley, Kent.—Abridged list of Sweet Peas.

DAVID W. THOMSON, 24, Frederick Street, Edinburgh.—Bulbs.

BROWN & WILSON, 10, Market Place, Manchester.—Bulbs.

GARDENING APPOINTMENTS.

MR. A. HAMMERS, formerly Head Gardener at Beaumont Park, Loughborough, Leicestershire, is now Superintendent of the Borough of Leicester Asylum Grounds.

MR. E. A. BELLS for the last two years Head Gardener at Sharrow Bay, Penrith, as Head Gardener to J. C. GOWAN, Esq., Woodfield, Frenchay, near Bristol.

MR. WILLIAM MUNT, for the last four years Foreman at Aldenham House, under Mr. E. BECKETT, as Head Gardener to BAILEY HAWKINS, Esq., Stagelhoe Park, Welwyn, Herts.

MR. F. H. CLARK, for six years Head Gardener at Mapperley Hall, Nottingham, as Head Gardener to J. C. SMALL, Esq., Aspley Hall, Notts.

MR. W. TUCK, for nine years Gardener at Stanley Park, Stroud, as Gardener to R. N. HOOPER, Esq., Staunham Court, Chipping Sodbury, Gloucestershire.

MR. J. J. LONERGAN, late Foreman in the gardens at The Lilies, Aylesbury, as Head Gardener to J. B. ADAMSON, Esq., Inglewood, Ledham, Cheshire.

MR. J. GOOD, some time Pleasure-ground Foreman at Falkland Park, South Norwood Hill, as Head Gardener at the Mount Nelson Hotel, Cape Town.

MR. WALTER KNOWLES, as Head Gardener to Sir JOSEPH SEDGWICK MONTEFIORE, East Cliff Lodge, Ramsgate, Kent.

MARKETS.

COVENT GARDEN, AUGUST 2.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day but often several times in one day. Ed.]

OUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums ...	1 6-2 6	Maidenhair Fern, per doz. bunches	4 0-8 0
Asparagus "Fern," bunch ...	2 0-2 6	Marguerites, p. doz. bunches ...	3 0-6 0
Carnations, per doz. blooms ...	1 0-2 0	Mignonette, dozen bunches ...	4 0-6 0
Cattleyas, per dozen	9 0-12 0	Montbretias, bunch	0 6-—
Eucharis, per dozen	3 0-5 0	Odontoglossums, per dozen ...	3 0-6 0
Gardenias, per doz.	1 0-2 0	Roses, Red, per doz. bunches	1 0-4 0
Gladiolus, scarlet, per dozen ...	3 0-5 0	— Tea, white, per dozen ...	2 6-4 0
— white, per doz.	3 0-5 0	— Safrano, per doz.	2 0-3 0
Lilium Harrisii, per dozen blooms ...	2 0-3 0	— Maréchal Niel, per doz. ...	4 0-8 0
Lilium lancifolium album, doz. blms.	4 0-8 0	— Catherine Mermet, per dozen	2 0-5 0
Lilium rubrum, doz.	4 0-8 0	Smilax, per bunch	4 0-5 0
Lilium longiflorum, per dozen ...	2 0-3 0	Tuberose, per doz. blooms...	0 9-1 0
Lily of Valley, per doz. bunches ...	6 0-18 0		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	5 0-7 0	Ferns, small, per 100	4 0-8 0
Arbor-vitæ, var., doz.	6 0-36 0	Ficus elastica, each	1 6-7 6
Aspidistras, p. doz.	18 0-36 0	Foliage plants, var., each	1 0-5 0
— specimen, each	5 0-10 6	Lily of Valley, each	1 9-3 0
Cannas, per dozen	18 0-—	Lycopodiums, doz.	8 0-4 0
Crotons, per doz.	18 0-30 0	Marguerites, per dozen	8 0-12 0
Cyclamen, per doz.	8 0-10 0	Myrtles, per dozen	6 0-8 0
Dracenas, var., per dozen ...	12 0-30 0	Palms, various, ea.	1 0-15 0
— viridis, per doz.	9 0-18 0	— specimens, each	21 0-83 0
Ericas, var., per doz.	12 0-36 0	Pelargoniums, scarlet, per dozen	8 0-12 0
Eucynymus, various, per dozen ...	6 0-18 0	— Ivyleaf, per doz.	8 0-10 0
Evergreens, var., per dozen ...	4 0-18 0	Spiras, per dozen	6 0-12 0
Ferns, in variety, per dozen ...	4 0-18 0		

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, English, Suffields, Juliens, and Keswicks, in sieves	1 0-2 0	Melons, each	1 6-2 6
Apricots, per sieve	8 0-—	— Foreign Rocks	2 0-4 0
Bananas, bunch	9 0-12 0	— Valencia, cases (24)	11 0-12 0
Cherries, English, per sieve	4 0-4 6	Nectarines, per doz. Class A.	6 0-9 0
— Napoleon, fine, per sieve	7 0-10 0	Class B.	4 0-6 0
Currants, blk., sieve	7 0-8 0	Oranges, Murcia, p. case...	8 0-21 0
— red, sieve	2 0-4 0	Peaches, per dozen Class A.	6 0-9 0
— white, in gals.	2 0-2 6	Class B.	4 0-6 0
Figs (New), per doz.	1 6-2 0	Pears, Californian, cases ...	8 0-10 0
Gooseberries, sieves	1 6-3 6	— Williams, French in boxes (48)	7 0-—
Grapes, Hamburg, new, per lb.	0 9-2 0	Pines, each	8 0-10 0
— Alicante	1 0-1 6	Plums in sieve	2 0-4 0
— Colmar	1 6-2 0	— in baskets	2 0-—
— Gros Maroc, per lb.	1 6-2 0	— English, Rivers per sieve ...	2 0-2 6
— Muscats, A., per lb.	1 6-2 6	Raspberries, punnets, doz.	3 0-6 0
— Muscats, B., per lb.	1 0-1 6	— cwt.	21 0-—
— Belgian, per lb.	0 8-1 0	Green Gages in sieves	—
— in barrels	6 0-10 0	— in boxes	—
Lemons, case	18 0-30 0		

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aubergines, per dz.	1 6-—	Onions, picklers per sieve	3 6-—
Cucoknes, globe, per doz.	1 6-2 0	— Egyptian, per cwt.	4 0-—
Beans, Scarlet Runners, bush.	2 6-3 0	— Green, dozen	1 6-2 6
— Broad, or home-grown, per bushel	1 0-1 6	Parsley, 12 bunches per sieve	9 0-1 0
— English, p. bus.	4 0-—	Peas ...	3 0-4 0
— per sieve	2 0-—	— English, per bushel	2 0-3 6
Bestbroots, new, per bunch	3 0-—	— in bags...	3 0-4 0
Beet, per dozen	0 6-8 0	Potatoes New, per cwt.	3 6-4 6
Cabbage, tatty	2 0-5 0	— English, new, Bedford, cwt.	3 0-4 6
— dozen	0 6-1 0	Radishes, 12 bches.	1 6-—
Carrots, new, p. dz.	1 0-2 6	Salad, small, punnets, per dozen	1 3-—
Cauliflowers, per dz.	2 0-3 6	Shallots, new, per dozen bunches	—
Cress, per dozen punnets	1 6-—	— new, per lb.	0 24-0 3
Cucumbers, doz.	1 9-2 9	Spinach, per sieve	2 0-—
Endive, new French, per dozen	2 0-—	Tomatos, English, new, per 12 lb.	4 6-5 6
Garlic, new, dozen bunches	2 0-—	— Channel Islands, per lb.	0 4-0 4 1/2
Horseradish, English, bundle	1 6-—	— French, crates, of 24 lb.	3 6-—
— foreign, per bundle...	0 10-1 0	— Bordeaux, box	2 0-2 3
Leeks, per dozen bunches ...	2 0-—	Turnips, new, per dozen ...	3 0-—
Lettuce, English Cabbage, bush.	1 0-2 0	— in bags...	3 0-—
— English Cos, per score	0 6-2 0	Vegetable Marrow, per dozen	0 6-1 0
Mint, new, p. doz. bunches	2 0-—	— tatty	1 6-2 0
Mushrooms, house, per lb.	1 6-—	Watercress, p. doz. bunches	0 4-0 6

REMARKS.—Apricots, Green Gages, and other varieties of Plums, are chiefly of foreign production; and Apples are plentiful, but rather small. A few Devonshire Quarrendens are coming to hand, and fetching from 3*l.* to 4*d.* per pound.

POTATOS.

Bedfords, 6*s.* to 9*s.* per ton. John Bath, 32 & 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: August 1.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report a thinly attended market, with almost a complete absence of business. New English Trifolium is in moderate supply, and meets as yet with only a small inquiry. The French are reported to have been buying yearling Clover-seed from America. New Mustard and Rape-seed are now offering, and this year's Thousand-headed Kale is also selling. New home-grown Rye is wanted. The Bird-seed trade is quiet but firm. There is no alteration this week in either Blue Peas or Earicot Beans.

FRUIT AND VEGETABLES.

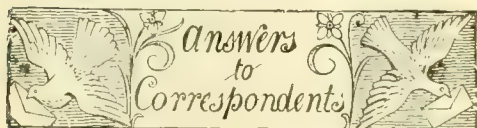
GLASGOW: August 1.—The following are the averages of the prices recorded since our last report:—Gooseberries, English, £4 to £6 10s. per ton; do., red berries, 1s. 3d. to 1s. 6d. per quarter; Cherries, English, 6s. to 8s. per half sieve; Strawberries, Scotch, 3s. to 6s. per dozen pounds; Pears, Angers Williams, 6s. 6d. per case; Grapes, English, 1s. 3d. to 1s. 6d. per lb.; do., Belgian, 10d. to 11d. per lb.; Melons, 24's, 7s. to 8s. per case; do., 30's, 10s. to 11s. do.; Greengages, French, 5d. to 6d. per lb.; Onions, Valencia, 4's, 3s. 6d. to 4s. per case; Cucumbers, 2s. 6d. to 3s. per dozen; Tomatos, Scotch, 5d. to 7d. per lb.; do., Guernsey, ordinary, 2d. to 3d. do.; do., smooth, 3d. to 4d. do.; French, 2s. to 2s. 6d. per crate; Bananas, extra, 11s. to 12s. per bunch; No. 1, 9s. to 10s. do.; No. 2, 7s. 6d. to 9s. do.; Oranges, ordinary 420's, 18s. to 20s. per case; large and extra large do., 22s. to 26s. do.; Lemons, Palermo, cases of 300, 11s. to 14s.; 360's, 8s. 6d. to 10s.; boxes of 200, 300, and 360, 5s. 6d. to 7s. 6d. do.; do. Naples, cases of 420, 16s. to 20s.: 300 and 360, 13s. to 15s., do.

LIVERPOOL: August 1.—Wholesale Vegetable Market.—Potatos, per cwt.: Early Regents, 3s. to 3s. 6d.; Kidneys, 4s. to 4s. 9d.; new, 1s. 4d. per 21 lb.; Turnips, 6d. to 8d. per 12 bunches; Swedes, 2s. 3d. to 2s. 6d. per cwt; Carrots, 6d. to 8d. per 12 bunches; Onions, foreign, 2s. 6d. to 3s. 6d. per cwt.; Parsley, 4d. to 8d. per dozen bunches; Lettuce, 4d. to 5d. per dozen; Cucumbers, 1s. 3d. to 3s. do.; Cauliflowers, 8d. to 1s. 6d. do.; Cabbages, 6d. to 1s. do.; Peas, 1s. 6d. to 1s. 9d. per bushel; Beans, 1s. to 1s. 2d. do.; Kidney Beans, 8d. to 10d. per peck; Scarlet Runners, 8d. to 1s. do. *St. John's*: Potatos, new, 1d. per lb.; Grapes, English, 1s. 6d. to 3s. 6d. per lb.; do., foreign, 6d. do.; Apples, 3d. to 6d. per lb.; Pears, 2d. do.; Tomatos, 6d. to 8d. do.; Currants, white, 4d. do.; do., black, 6d. do.; Gooseberries, 2d. per quart; Peas, 10d. to 1s. per peck; Cherries, 6d. to 8d. per lb.; Cucumbers, 4d. each. *Birkenhead*: Potatos, 1s. to 1s. 2d. per peck; Peas, 6d. to 1s. 2d. do.; Cucumbers, 2d. to 4d. each; Currants, black, 6d. per lb.; do., red, 4d. do.; Cherries, 4d. to 8d. do.; Gooseberries, 1½d. to 3d. per quart; Grapes, English, 1s. 6d. to 3s. per lb.; do., foreign, 8d. do.

CORN.

AVERAGE PRICES OF British Corn (per imperial qr.), for the week ending July 28, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.		1900.		Difference.	
	s.	d.	s.	d.	s.	d.
Wheat	25	2	29	3	+	4 1
Barley	22	5	24	4	+	1 11
Oats	18	2	19	9	+	1 7



AMERICAN HORTICULTURAL BOOKS: *America*. These are numerous. Enquire of Messrs. Williams & Norgate, Foreign Booksellers, 14, Henrietta Street, Covent Garden, W.C.

ATHLETIC PEA: *Correspondent*. We have not seen a specimen, but we should not be surprised if it turns out to be a fasciated variety like that which is sometimes grown as the Crown Pea or the Mummy Pea, and which turns up on our table as a curiosity every year.

BLEEDING OF CHESTNUT-TREE: *Constant Reader*. Nothing that you can do is likely to stop the exudation of sap. The bits of bark sent are coated with the dried sap. The tree will gradually get into bad health and die.

CABBAGE-LETTUCE GIANT CRYSTAL HEAD: *J. M.* We do not question your eulogies, but advise you to send a specimen to the Fruit Committee of the Royal Horticultural Society, when we shall have an opportunity of seeing it.

CARNATION SEEDLINGS: *S. A. B.* Very nice border varieties, but not better than existing varieties.

CORRECTION. The figure (fig. 8, p. 47) stated to represent *Laelio-Cattleya Wigandae* var. *aurea* is really *Laelio-Cattleya Henry Greenwood* var. *superba*—a variety of that already figured on Nov. 26, 1898.

CATERPILLAR FEEDING ON POTATO-TOPS: *C. W. Horley*. That of the Death's-head Moth. They

are voracious, but not being very numerous they do but little harm to Potatos, or to the Jasmin, upon which they also feed.

CHRYSANTHEMUMS DISEASED: *A. B.* A leaf blight. The rounded brown spots on the leaves have been killed by a fungus, which lives inside the leaf, and spreads into the green parts. It appears to be propagated by spores falling on the leaves, beginning with the lower ones and extending upwards from leaf to leaf. The dying leaves should be removed and burnt, to prevent them giving off crops of spores. A great deal might be done towards checking the disease by spraying the plants with Strawsonite, or with potassium sulphide, ½ oz. in a gallon of water. Promote the growth of new foliage, otherwise the plants will become exhausted and flower badly. This leaf-blight is probably identical with one which has caused considerable trouble in America; it is also common in this country.

CROTON-LEAVES DISEASED: *J. O'B.* The fungus is *Septoria crotonis*, Bres. The supposition that the fungus came with plants from Zanzibar is probably correct, as it was described from East African specimens of *Croton macrostachyus*. The old leaves showing brown patches are charged with spores, which should be either destroyed by a fungicide, or removed and burned, otherwise the spores inoculate the young foliage. *G. M.*

GRAPES DISEASED: *A. S.* The "spot" fungus.

LILY-OF-THE-VALLEY: *M. & Co.* The temperature would suffice to keep the roots dormant, if it does not rise above 34° or 36°. Actual freezing is not required, and may be injurious. The prices charged for cold-storage are unknown to us. The root masses can be kept in the cold room all through the spring, summer, and autumn, and be removed in batches and placed in heat.

LIME-TREE LEAVES WITH GALLS: *H. & Co.* The galls are common on the Lime, and are known as Nail-galls. They are the work of a mite.

MINT: *J. G.* Attacked by a fungus, *Aecidium menthae*. Burn the leaves.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*A. J. Keen*. 3, *Ornithogalum thyrsoides*, var. *aureum*.—*J. H. Anguloa uniflora*.—*W. Hesketh*. *Lysimachia punctata*, Linn.—*W. P. 1*, *Lysimachia vulgaris*, L.; 2, *Verbascum nigrum*, L.; 3, *Centaurea rutifolia*, Sibth. & Sm.—*E. V. B.* *Deutzia gracilis*. The little shrub should be planted in a sunny, open space, sheltered from the N. and E. winds. In June the plant, if of flowering age, should be pruned, removing the weak, thin shoots, but leaving the stronger at full length, excepting in the case of young plants, when these shoots should be cut back to half or two-thirds of their length (in the winter), so as to induce a greater number of shoots to push forth. The plant should have a moderately rich, light, loamy soil, and good drainage, and in dry weather, during the growing season, liquid-manure should be afforded alternately with clean water. The object should be to obtain well-ripened, lengthy shoots, which make it a more graceful object than the stumpy plants usually seen growing in pots. We should imagine that this plant is not likely to do well so far north as Aberdeenshire.—*A. J. R.* 1, *Oncidium flexuosum*; 2, *Brassavola lineata*; 3, *Codiaeum trilobum*; 4, *Codiaeum maculatum*; 5, *Dendrobium chrysanthum*; 6, *Dracaena hybrida*; 7, *Adiantum fragrantissimum*. The plant sent as a hybrid *Calceolaria* is *C. pinnata*, so far as we can tell from the scrap.—*Henry Gandy*. *Rudbeckia hirta*.

NINE VINES FOR A MIXED VINERY, AND THE BORDER: *W. M.* Black Hamburgh, 2; Foster's Seedling, 1; Ascot Frontignan for the coolest part of the house, 1; Buckland Sweetwater, 1; Chasselas Rose, 1; Gros Maroc, 2; Lady Downe's Seedling, 1. The border should be dug out 2½ to 3 feet deep, and if the soil be wet and retentive half that depth will be better, the requisite body of soil being got by making the border higher than the surrounding land. If the bottom is gravelly or sandy, no drainage is needed, otherwise pipes and rubble drains must be laid in, and a main drain made to conduct the water to a distance. Use loam, coarsely broken bones, lime-rubble, and charcoal chiefly in making the border, not chopping the loam finely. Plant the Vines in late October, or wait till the end of March or

April, and plant Vines on the move. Make it piecemeal, that is, 4 feet in width the first year, and add 2 feet to the width annually. You can keep the moisture in it by building up a close wall of sods, or by putting a dung lining against the front, or on both fronts if it be made inside and outside the vinery. Make it at the least 6 inches higher than the determined level.

PEAR CRACK: *J. G.* The result of the attack of a fungus, *Fusicladium dendriticum*.

ROSE-LEAVES SPOTTED: *No Name*. The spots suggest sun-scald, but they also bear tiny black points, the tufts of a very minute fungus, which lives only in the outermost cells of the leaf. Whether this fungus can cause the spots, is not quite certain; it might come on scalded spots. If the fungus is the cause of trouble, then potassium sulphide should eradicate it. If sun-scald, suitable shading is required. By carrying out both treatments, you may be able to determine whether sun-scald or fungus is the primary cause of trouble.

SPOTS ON LEAVES OF ORCHIDS: *X. Y. Z.* A microscopic fungus called *Glaeosporium affine*, Sacc., is present on the Orchid-leaf, but is not the cause of a disease, only appearing on leaves that have become feeble from some other cause. *G. M.*

"ALL ABOUT SWEET PEAS": *O. W. E.* The book is published in America. We do not know the price.

TALL RHODODENDRONS: *C. E. E.* Cut them hard back in late autumn, and the bushes will push new shoots abundantly the next spring; defer the operation to the spring if you would not like the bare look of the shrubs during the winter; but in this case, the break being more rapid, will be far less prolific of shoots. The grafted plants will probably throw out shoots from the stocks, the whole of which must be rubbed off whilst still young. Care must be taken in the case of grafted varieties not to prune back below the graft.

THE STOPPAGE OF GROWTH IN PEACH FRUITS, &c.: *P. H.* The fruits remain practically without much increase of size during the period the seed or "stone" is forming, viz., about five weeks. That over, increase in size is rapid.

THE STOTT SPRAYER: *E. O. Orpet, Lancaster, Mass., U.S.A.* The sprayer is still being made by Stott & Co., Grove Works, Bury New Road, Manchester.

TWENTY-FOUR ROSES FOR FORCING IN POTS, TEAS AND H. P.'s: *W. M.* New Roses of the last ten years—Corinna, T.; Danmark, H.T.; Enchantress, T.; Golden Gate, T.; Lady Henry Grosvenor, H.T.; Maman Cochet, T.; Souvenir d'Auguste Metral, H.T.; Souvenir de Catherine Guillot, T.; Souvenir du President Carnot, H.T.; Zenobia, Moss. Older varieties—Chas. Lawson, Coupe d'Hebe, Paul Ricaut; Alfred Colomb, Alphonse Souper, Baroress Rothschild, Captain Christy, Chas. Lefebvre, Comtesse de Serenye, Duke of Wellington, Earl Pembroke, E. Y. Teas, La France, H.P.'s. Adam, Belle Lyonnaise, Climbing Devoniensis, and Comtesse de Nadaillac among Teas should not be omitted. Buy the plants early, and pot them forthwith.

WATER FOR FILLING GARDEN HEATING APPARATUS: *D. L. N.* Rain-water is the best, for being free from lime and magnesia carbonates, it does not leave a residuum in the boiler to be turned into stone by the action of fire-heat, to the injury of the metal of which the boiler is made.

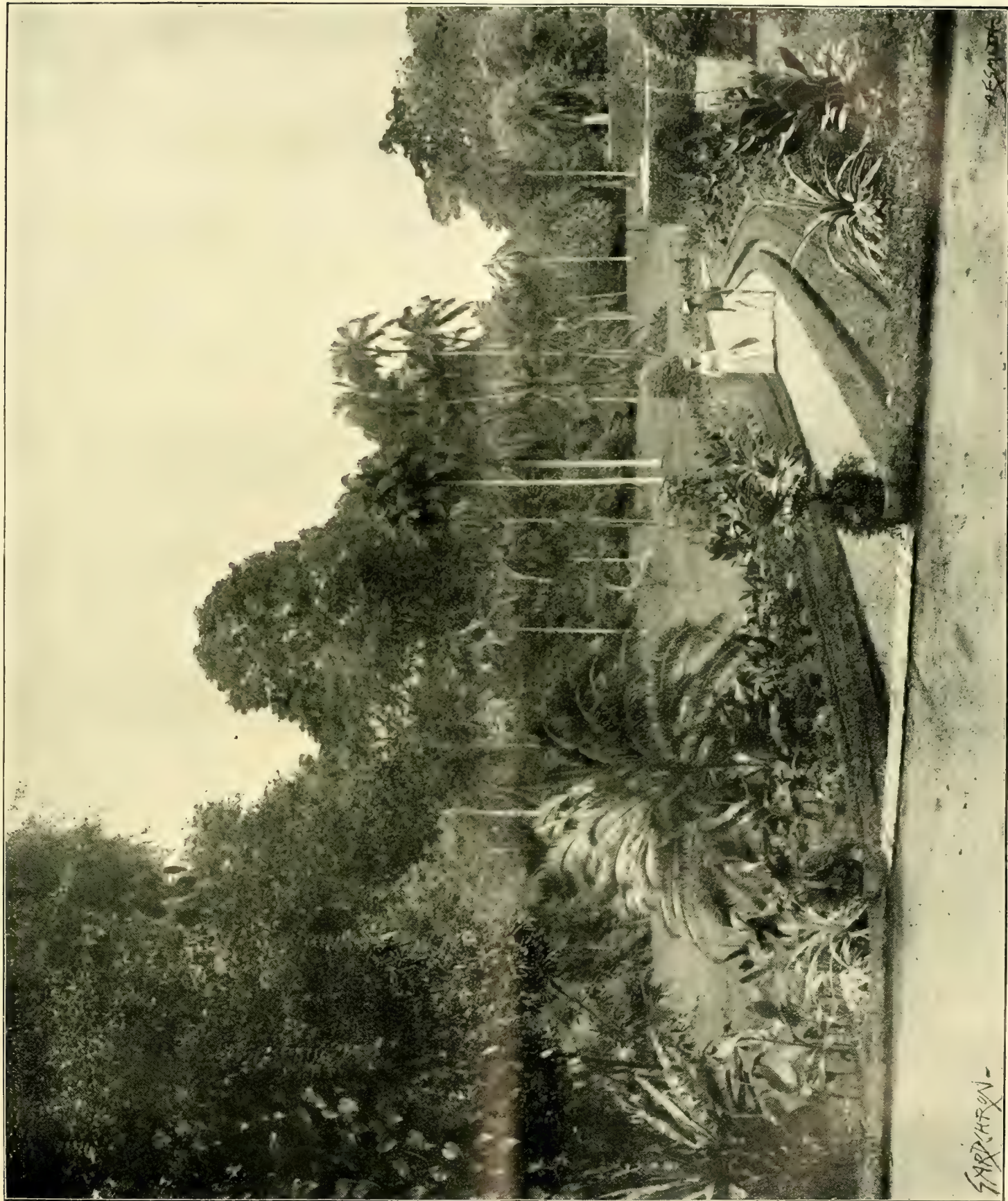
COMMUNICATIONS RECEIVED.—*J. M.*, Erfurt.—*H. G. C.*—*C. R. H.*—*B. W.*—*M. L. de V.*—*J. C. W.*—*Peradeniya*.—*W. W. J. & Son*.—*T. F.*—*A. Worsley*.—*F. J. C. J. E.*—*A. J. Knowles*.—*Constant Reader*.—*A. B. R.*—*C. G.*—*T. A.*, Goldalming.—*E. J. A.*—*W. Horton*.—*Mack & Milu*.—*Rev. H. H. D.*—*De B. C.*—*H. T. M.*—*E. Mawley*.

SPECIMENS, PHOTOGRAPHS, &c., RECEIVED WITH THANKS.—*A. J. L.*

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS' AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



VIEW IN THE ROYAL BOTANIC GARDEN, PERADENIYA, CEYLON.



THE

Gardeners' Chronicle

No. 711.—SATURDAY, AUG. 11, 1900.

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WILD FLOWERS IN THE GARDEN.

EVEN as human nature was driven from man's olden earthly Paradise to find less inspiring scenes of more arduous activity, so Nature (in the Wordsworthian sense of that comprehensive term), is driven from many of our modern gardens, which delight in dazzling floral splendours, and know little of umbrageousness and tranquillising shade. Therein it is perfectly safe to affirm Robert Burns would not have found himself at home. He who so memorably sang the beauty of the Daisy, and imparted to its involuntary destruction by the plough-share an almost tragic significance (intensified by the prediction of his own early death), was essentially a lover of the woodlands and the fields. His father was a gardener before he became an agriculturist; and from him he may have inherited his love of flowers. But the floral beauties of which he chiefly sings are those of the way-sides, or the shadowy glens. One of his loveliest pictures of this exquisite kind is the central glory of that most inspired and powerfully impassioned of all his poems, "To Mary in Heaven":—

"Ayr gurgling kissed his pebbled shore,
O'erhung with wild woods, thick'ning green;
The fragrant Birch, and Hawthorn hoar,
Twined, amorous, round the raptured scene;
The flowers sprang, wanton to be prest;
The birds sang love on every spray;
Till too, too soon the glowing west
Proclaimed the speed of winged day."

Nothing is more beautiful to me at this season of sunlight and profuse vegetation than the picturesque appearance of certain wild flowers in shady corners of my garden. How they came there, and found such a perfect environment, I cannot conceive; perhaps their tender seeds were carried thither by birds, or blown to those charmingly-sheltered places on the wings of the western winds. There, in any case, their floral results are annually conspicuous with most graceful effect. Chief among these, and in many instances growing out of the garden-wall, in which its roots are deeply inserted, is the supremely attractive wild Geranium (G. Robertianum), one of the most fascinating of all woodland flowers. I have very seldom seen it so effective elsewhere; its pale pink flowers are seen to great artistic advantage among its fronds of glowing green. Independently of its delicately-formed floral possessions or creations, Geranium Robertianum has the grace of a Maidenhair Fern.

Beneath tall Tree-Fuchsias at the head of the garden, the pink Campion has found a permanent abode. It also is a daring intruder into the regions of cultivation; but, as I have indicated, it only ventures on the confines of these. But this modesty is not owing to lack of courage, for the Campion is the bravest, and one of the strongest of sylvan flowers: not seldom have I seen, in situations where its summer companions had entirely disappeared, its flowers defying the winter blasts; but it delights in green and shadowy recesses, which, if it penetrated farther into the garden, it might not easily find. Another floral favourite, which is somewhat less shy in this special direction, is the beautiful wood Sorrel, Oxalis acetosella, a flower which (as he himself told me) was greatly admired by the late Matthew Arnold; a floral gem of the most delicate beauty, often found growing in silent woodland places, around the roots of giant trees. I find it very frequently in the garden, in shady situations. The Linaria is at present discoverable in full flower at the foot of my finest Lilium auratum var. platyphyllum, probably meditating an upward movement, which, if strongly attempted, must be kept in control. Another of my Lilies of Oriental extraction has the Daisy of Burns flowering at its feet; a rare floral combination of Scotland and Japan, I presume that Linaria cymbalaria might, without any injustice being done to its aspect or character, be considered a wild flower; it reveals, at any rate, the rural characteristics to the reverential gaze of the lover of Nature, as he beholds it festooning with its miniature flowers of lilac and white, so charming in their formation, the entire garden-wall. Its sweetest companion is the pale-blue Woodruff, classically styled Asperula azurea odorata. David R. Williamson.

CURIOSITIES OF THE GLASS-HOUSE AND GARDEN.

I.—FOREIGN LEECHES.

So far as we are aware no systematic attempt has yet been made to classify and tabulate the interesting creatures which reach this country from foreign lands, and appear for a time in our gardens and glasshouses, to be again lost to sight because they are unable to make a permanent home for themselves. They are often creatures of a day, or a season at most, and frequently fall into the hands of the inexperienced, who simply regard them with temporary surprise, and allow them to pass out of sight and out of mind. Sometimes it is a lovely moth or gorgeous butterfly which emerges suddenly from its cocoon, flits about

for a few hours during the hottest part of the day, and is seen no more. At other times it is a curious fly, an unusual worm or slug, a beetle or cockroach, a remarkable spider, or unfamiliar leech.

While it must be understood that the life-story of these exotic creatures cannot usually be fully understood by observing them under these unnatural conditions, it should, on the other hand, be remembered that it is easier to determine certain facts respecting them by observing the creatures when alive, than by studying large numbers which only reach the expert in spirits from their native haunts.

Many an interesting chapter might be added to our volumes on natural history if only specimens of unusual insects, pests, importations from foreign lands, and casual visitors, were sent alive to the editor with notes relating thereto which would facilitate identification, and assist in the preparation of a report. We hope from time to time to supply typical illustrations of this interesting subject, with a view to bringing these papers together ultimately as a guide to those whose work in gardens and greenhouses makes a volume of the curiosities of the garden a desideratum.

Let us take, by way of first study, the foreign leeches. It is well known that we have a good many different kinds of leeches in England; some of these are native, others are doubtfully so, while a third set are decided importations. A great deal of interest was aroused some fifty years ago by the discovery of a peculiar leech in Regent's Park. Only one specimen was found at the time by Mr. Hoffman, who submitted it to Dr. Gray, of the British Museum. It was found to correspond with Dutrochet's leech (Trochetia subviridis, 1817), more recently called Trocheta, and on the strength of its being found in England, it was claimed as British. Objection was urged to this on the ground that it might have been taken into the viscera of a deer or other animal either in its young state or as an egg. In 1865 Dr. Murie dissected a Moluccan deer, and in a paper read before the Zoological Society of that year described a leech he had found in the intestines, which seemed to correspond with the Regent's Park specimen. It is on record that the latter when alive was upwards of seven inches in length, and when preserved in spirits was yet fully six inches long, and half an inch in diameter. The back was uniformly dull greenish-grey, the under-surface being lighter and more muscular.

In 1869, some specimens of a leech answering this description, were found at Horsham, in Sussex. They were submitted to Mr. Buckland, and an account of them appeared in *Land and Water*. We learn from the report that several of the first authorities of the day agreed that they belonged to the above-named species (Trochetia subviridis, Dutr.), and Dr. Baird made the following statement, which throws light on the earlier records. "The land leeches which you brought here (to the British Museum), belong certainly to the Trocheta subviridis of Dutrochet. I put them into weak spirits to kill them, but after placing them in stronger spirits, the colour has nearly gone from the leeches, and imparted itself to the spirits, which is now of a fine green hue! The specimen sent some few years ago by Mr. Bartlett, from the Zoological Gardens, is also a true Trocheta; but the one brought by Dr. Murie, is not a Trocheta at all, but must belong, from the structure of the oral, and especially the ventral (? anal) sucker either to a peculiar species of Hamopsis, or to a new genus not hitherto described." My good friend the Rev. W. Houghton, M.A., also examined it, and gave the Horsham species as his verdict that the discovery of this interesting subterranean species makes it clear that it is a genuine member of the British fauna. The conclusion, certainly, was not warranted by the facts. Dr. Baird received certain worms from Wales, and two localities in the eastern counties, which were decidedly un-English in appearance, and it would have been very rash to conclude that they were British because they had been taken in three widely dif-

ferent localities. We should be able greatly to extend our fauna and flora if we were to include all such casuals. They have a peculiar interest in other ways, especially if in time they become established among us, but great evils may result from claiming as natives such decidedly exotic forms.

Recent records of the recurrence of this leech do not confirm the statement that it is indigenous, and I think we must for the present regard it as an importation. It will be observed that it is not aquatic, as many of our native species are, and it does not find a place among the leeches of Ireland recently described by Dr. Scharff in the *Irish Naturalist*. Our land-leeches, and what Mr. Houghton calls the sub-terrestrial species, are still too little known. It is said that some years ago leeches were so abundant in the fields and on the footpaths in certain parts of Sussex, that the ladies in their evening walks had to avoid the localities. Mr. Bartlett also said that he often observed leeches on the greensward in the Regent's Park Gardens. These statements must, I think, be taken to show that under certain conditions, leeches, like other animals, become abnormally abundant; but as to what those conditions are we as yet know nothing.

THE PENSURST LEECH.

It is pleasing here to be able to draw attention to the presence of another form of leech in English glass-houses, very nearly allied to the species above referred to, but differing in some essential particulars. Early in July a specimen was forwarded to us by the Editor from the Redleaf Gardens, Penshurst, and the following particulars were kindly supplied by Mr. Ringham: "When found, the leech was amongst the drainage in a seed-pan, which had been standing on the gravel-bed beneath the staging in one of the Orchid-houses. From the time it was found on the Monday morning (July 9, 1900) till the following afternoon, it remained on the outside of a flower-pot placed on an inverted one which stood in a water-tank. It seemed to have a dislike to the water, for directly it was submerged it began to lengthen out, and feel its way up the side of the pot until it was above the water-line again."

This agrees with what Houghton says about *Trocheta*: "The individuals did not seem at all at home when placed in a vessel full of water; they dropped to the bottom, and after moving about for a time fixed themselves there. I could not prevail on either of them to swim. Dutrochet considered *Trocheta* entirely terrestrial; but M. Moquin-Tandon asserts that he has kept many individuals alive in water more than fifteen days. Further observations are wanting to clear up this point. The allied genera swim readily enough; and, as we know, live in the water for the most part. Is *Trocheta* a curious exception to the rest?"

Mr. Ringham says that during the time the Penshurst leech was under observation, it crawled about the outside of the flower-pot, and when fully extended, would measure at least a foot in length. It left the same sticky trail behind it as a snail would do. Mr. Ringham has only been in charge of the gardens about three months, and this is the first of these creatures that has come under his notice; but some of the men have found specimens of the same, or an allied form, at previous dates, going back some ten or twelve years.

It is curious to observe that no Orchids have been bought or imported recently, so that it would seem as if the animals must either have been some time in the house unobserved, or its cocoon has a habit of remaining a considerable time undeveloped. It could not be seen that the plants had in any way suffered from the presence of the leech; and no foreign worms have been found upon which it would be likely to feed. When not in motion, the leech coiled itself up, which suggests that the habit is a protection against rapid evaporation in a warm, dry climate.

The leech from Penshurst differs from the various forms of *Trocheta* described by Moquin-Tandon. Its colour is a light fawn on the back (or dorsal

surface), and a light grey beneath. Right down the back runs a central black stripe, with a wider pair of dark lines not quite so sharply defined on either side. The anterior sucker is fan-shaped, and there is no trace of eyes. Unfortunately when it reached us the specimen had suffered injury in transit, and only about 2 inches of the forepart, including the segments which carry the principal organs, retained vitality.

We should regard the animal as either a variety of *Trocheta subviridis*, or more probably a closely-allied species, imported from abroad. As it has appeared more than once in the same houses it is possible the leech breeds here; and as the middle of June is the time when our leeches usually lay their cocoons, it is not unlikely that in the course of a few weeks other specimens may be discovered. We should be glad if gardeners meeting with this, or any other strange creatures, would transmit the same to this office for examination. If possible, animals should be sent alive. Glass bottles usually form the best receptacles, and these may be secured by being placed in boxes with a little moss. *A Sussex Naturalist*.

Halli and rosy-crispum have produced a cream-coloured hybrid. This is rather peculiar, the tips of the sepals only showing little rose.

This hybrid (so far as I know) is the scarcest of all the artificially-raised varieties that have been shown. *De B. Crawshay*.

ANGULOA UNIFLORA.

This pretty species shows more variation than any of the others, and for that reason every importation of it produces forms which are often mistaken for new species. Usually the large flowers, somewhat resembling short-petalled Tulips at a distance, are white, but occasionally forms more or less freckled with rose appear, the best of which came from an importation made by Messrs. F. Sander & Co. a few years ago, and which were fairly constant. This form was identified as *A. uniflora* Turneri. A pretty variety with blush-white flowers is sent by Mr. E. Bristow, gr. to Mrs. Temple, Leyswood, Groombridge. The *Anguloas*, like the *Lycastes*, produce a number of showy flowers from each new growth. They are easily cultivated in a cool intermediate-house.



FIG. 26.—ODONTOGLOSSUM HALLIO-CRISPUM CRAWSHAYANUM.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM HALLIO-CRISPUM CRAWSHAYANUM.

To place on record the history of this artificial hybrid (see fig. 26) may be of interest. I crossed the blooms (*O. Halli* ♀ × *O. crispum roseum* ♂) on June 21, 1894; seeds were sown Sept. 18, 1895, germinated March 6, 1896; plants bloomed June 28, 1899; were exhibited at Hybrid Conference July 11, 1899, with eight blooms; and again at the Royal Horticultural Society, July 31, 1900, with a ten-flowered spike. The size of bloom and marking have improved; the plant carries all its four pseudobulbs. Mr. Norman C. Cookson was the first to raise this cross, exhibiting his three-bulbed plant with three blooms at the Royal Horticultural Society, November 24, 1896, which was awarded a First-class Certificate. His was raised from *Od. Halli* ♀ × *Od. crispum* Cooksoni ♂. The type being the progeny of two heavily-blotched forms, has much more marking than my variety, which, from having an unspotted crispum for the male parent, is to be expected. The yellow ground of

CATTLEYA REX.

When Messrs. Linden originally introduced this pretty *Cattleya*, it was thought that it might possibly be a form of *Cattleya Dowiana*, though in growth, and in the markings and arrangement of the flowers, it seemed florally distinct. But little variation, however, has appeared from the type-plant; and it is now generally admitted to be distinct. A fine form of it, bearing a four-flowered inflorescence, is in flower in the Right Hon. Lord Rothschild's gardens at Tring Park, Tring (gr., Mr. E. Hill). In the general form of the flower there is a suggestion of *Cattleya maxima*, the labellum being more like that of *C. maxima* than *C. Dowiana*. The sepals and petals are light yellow, the crimped-edged lip marked with rosy-crimson.

CYPRIPEDIUM × ABESSA.

An illustration and description by Mr. Oakes Ames of this hybrid *Cypripedium*, which was obtained by crossing *C. × Euryale* with the pollen of *C. barbatum* var. *illustre*, is given in the issue of *American Gardening* for July 21. The cross is interesting, as *C. × Abessa* shows in a marked degree indications of three species, viz., *C. super*

biens and *C. Lawrenceanum*, the parents of *C. × Euryalus*; and *C. barbatum* var. *illustris*, the pollen-parent in this instance. The author remarks: "The cross recorded above was made about three years ago, with an idea of ascertaining what effect the variety of *C. barbatum* used would have. The result has proved highly interesting and instructive, and show that in some cases varieties will transmit those qualities to which varietal terms are due."

p. 291), from whom we borrow these particulars, makes two forms: the one of northern distribution with no proper stem, the other of southern habitat (Mexico), with a more or less tall stem and thinner leaves. It is found in Colorado, New Mexico, Utah, and California, where the fruits are eaten as Dates, and preserved by the Indians for winter consumption.

The natives of Arizona are said also to stew the flower-buds, and find them palatable and nourishing.

GLAUCO-YUCCA: fruit dry, indehiscent.
7. *Y. brevifolia*, Engelmann, south-west.
8. *Y. gloriosa*, Linn., south-east.

CHENO-YUCCA: fruit capsular, septical.
9. *Y. rupicola*, Sch., south-west.
10. *Y. angustifolia*, Pursh, west and south-west.
11. *Y. filamentosa*, Linn., south-east.

HERERO-YUCCA: fruit capsular, loculicidal.
12. *Y. Whipplei*, Torrey, south-west.

The terms west, south-west, &c., refer, of course, exclusively to the North American continent. The features which are relied on to distinguish the characters are mainly taken from the leaves and seeds.

Yuccas are among the most decorative of plants; their stout foliage and noble panicles of creamy-white flowers compelling admiration. Some of them, like the old *gloriosa* and *Y. filifera*, are hardy. Indeed, we have known them to grow and flower for years in one of the grimmest parts of East London. The structure of the leaves explains its powers of resistance. In some gardens it is the practice to tie up the old leaves in winter so as to protect the central bud; but we have seen so much rotting of the base of the leaves in such cases that we cannot recommend the practice. Sometimes the flower-bud is formed too late in autumn to come to perfection; in that case, it may be protected by a little bracken thrown over it, when it will flower the next summer.

Till Mr. Ewbank told us of the fact, we were not aware whether *Y. baccata* had flowered in this country or not. Our illustration (fig. 27) is taken from a photograph which was obligingly placed at our disposal by the Editor of the *Garden*.

THE THREE SHOWS OF THE NATIONAL ROSE SOCIETY.

THE Rose season has been this year, in most parts of the country, a very trying and disappointing one. In the first place the frosts and cold winds at the end of April and in the middle of May, caused a large proportion of the shoots to become "blind." In fact, at the Temple Show, on May 23, I came across only one Rose-grower who did not take a more or less desponding view of his prospects for the coming season. A little later on, when the blind shoots had been removed, a sufficient number remained, at all events from an exhibitor's point of view, with satisfactory young buds at the ends of them. These young buds day by day improved, and as the plants continued healthy and strong, delightful dreams of magnificent flowers in time for "The National," as the leading exhibition of the National Rose Society is familiarly styled, were freely indulged in. But alas, those glorious visions were never to be realised, for cold weather set in and kept the buds almost at a standstill for at least a fortnight. This cold spell was immediately followed by such a burst of tropical heat as is seldom experienced in this country, with the result that the flower-buds were forced prematurely into bloom, and consequently came in most cases undersized and of poor substance. In spoiling the season, the June cold had, however, far more to answer for than the July heat.

This preface respecting the weather conditions under which our Roses were grown this year is necessary, in order that the following notes on the National Rose Society's three exhibitions may be clearly understood.

SALISBURY.

We will first consider the Salisbury show. Although the fixture was an unusually late one, June 27, the number of blooms of exhibition Roses was smaller than at any previous southern show, viz. 1160 blooms. That the backward season was almost entirely accountable for this small display is shown by the fact that no exhibitor came from any town further north than Cambridge. Added to this, the exhibitions held on the same day at Richmond and Southampton still further reduced the number of Roses staged. With very few exceptions, however, the exhibitors remained loyal to the National Rose Society; even those who were



FIG. 27.—YUCCA BACCATA IN MR. EWBANK'S GARDEN, RYDE, ISLE OF WIGHT.

YUCCA BACCATA.

THIS species now or recently flowering in Mr. Ewbank's garden, near Ryde, Isle of Wight, belongs to the group founded by Engelmann on the fleshy character of the fruit. The leaves are spine-tipped, thick and rough; and the margin is broken up into fine threads. The paniced inflorescence has lanceolate, whitish bracts; the stamens are spreading, and the purple fruit is ovate, about the size of a hen's egg. Engelmann (*Botanical Works*,

The fibres of the leaves are used for cordage; the trunks in the Mexican form are used for palings, and the tender top of the stem is roasted and eaten. Engelmann gives the following arrangement of the species:—

SARGO-YUCCA: fruit succulent.

1. *Y. aloifolia*, L., south-east and south.
2. *Y. yucatana*, Engelmann, south.
3. *Y. guatemalensis*, Baker, south.
4. *Y. Treculiana*, Carrière, south-west.
5. *Y. baccata*, Torrey, south-west.
6. *Y. Schottii*, Engelmann, south-west.

showing elsewhere in most cases came down themselves with Roses to Salisbury. The spot on which the show was held was one of the most charming that could have been selected—in a meadow at the back of the Bishop's palace, and under the very shadow, as it were, of Salisbury's splendid cathedral. The redeeming feature of the show, as regards exhibits, was the magnificent stands of "garden" Roses at one end of the new and spacious tent provided by the local committee. Although the weather was warm and bright, most of the flowers retained their freshness throughout the day.

CRYSTAL PALACE.

The Society's Metropolitan Exhibition took place as usual at the Crystal Palace, filling very nearly the whole of the north nave. It was a large show, the number of blooms of exhibition varieties exceeding the average number for the five previous Crystal Palace Rose Shows by 540. It was also more extensive than either of the two preceding exhibitions. The actual number of exhibition blooms staged amounted to 6,500. There were some fine stands, but taken as a whole, the quality was not equal to what we expect to see at our National show; this, however, as has been before explained, was entirely due to the backward and untoward character of the season. Judging by the exhibits, the most favoured parts of the country this year appear to have been such counties in the west of England as Hereford, Somerset, Gloucester, and Worcester. To give some idea of the extent of the show, I may state that there were no fewer than ninety-nine exhibitors who staged altogether 400 stands of flowers. Twenty-five English counties were represented, the most northerly of these being Nottinghamshire. Three exhibitors came from Ireland, but the season was too backward to allow of any Scotch rosarians putting in an appearance. We do not ever remember a Crystal Palace Rose Show in which everything worked quite as smoothly, for this, great credit is due not only to Mr. Caselton, the garden superintendent of the Crystal Palace, but also to the Society's stewards who took charge of the various sections of the exhibition. When we consider the number of exhibitors, the extent of the show, and that the whole of the judging was completed by the sixty-six judges engaged in less than an hour; this may be regarded as highly creditable to all concerned—stewards, exhibitors, and judges alike.

BIRMINGHAM.

The Society's northern exhibition was held in the conservatory attached to the beautifully-situated gardens of the Birmingham Botanical and Horticultural Society at Edgbaston. But for the great heat which prevailed both before and at the time of the exhibition—for the show was held on July 19, one of the hottest days of the present summer, this would undoubtedly have been the best Rose Show of the year. As it was, the exhibition proved a fine and extensive one. The number of blooms of exhibition varieties staged amounted to 3,730, or 300 in excess of the average number for the previous five northern shows, but 500 less than at the largest provincial show ever held by the society, which took place in the same gardens in 1890. The exhibit of "garden" Roses was a noteworthy feature of this show. Only a few years ago these so-called "garden" Roses were only to be met with at our early exhibitions, but now that so many charming varieties other than summer-flowering kinds have been introduced, it appears they can be shown as late in the season, and as well, as the exhibition Roses.

At both provincial shows the arrangements made by the local committee were as complete and satisfactory as could possibly be wished, and few are aware how much the success of an exhibition depends upon many small but important details being properly carried out.

Regarded from the point of view of the number of visitors present, all three exhibitions must be considered as having been un-

usually successful. Indeed, as regards comfort, some of the 23,000 visitors at the Crystal Palace this year on the Rose Show day could well have been spared, for owing to the want of sufficient police in the afternoon to regulate the circulation of the crowd, the flowers could only be inspected with difficulty. At the Metropolitan exhibition, one of the most encouraging features was the number of new recruits to be found among the large army of exhibitors; and considering the small experience of some of them, the general excellence of their exhibits was highly creditable.

The leading honours of the year were, as has already been chronicled, thus distributed: the Amateur Champion Challenge Trophy was for the ninth time in eleven years carried off by that invincible competitor, Mr. E. B. Lindsell, of Hitchin; the same exhibitor also again claimed the Jubilee Challenge Trophy. The Nurserymen's Challenge Trophy was for the first time secured by that well known Irish firm, Messrs. A. Dickson & Sons, of Newtownards and Ledbury; while the Jubilee Challenge Trophy was for the ninth time in fourteen years won by Messrs. Harkness & Sons, of Bedale and Hitchin. The Amateur Tea and Noisette Trophy fell to Mr. A. Hill Gray, of Bath, who has now won it four times. *E. M., Berkhamsted.*

IRELAND.

THE PEAT QUESTION.

THE peat question, with especial reference to this country, has received at the hands of Professor Johnson, D.Sc., a very careful analysis. The result of his labours has been embodied in a pamphlet recently published. Prior to dealing with this question, the Professor undertook a continental journey, having for his object the investigation of the management of bog-land, notably in Germany. Of special service was his experience at the Bernau experimental Bog-station in Bavaria, the task of reclamation being entrusted to the hands of Professors Baumann and Tubeuf, where the practical advantages were keenly appreciated and noted in detail.

The total area under bog in Ireland amounts to something like 1,861 square miles, the largest share being divided amongst the counties of Donegal, Mayo, and Galway. The thickness of the peat-beds of Continental Europe varies between 9 and 20 feet, whilst in this country bogs are met with with at the least 40 feet in thickness; the average, however, is put down at 25 feet. Its principal use at the present day is for fuel, and the management of a bog can best be described as primitive.

Owing to the many uses to which peat and its derivatives are now applied, it is strange that our owners of bogs do not try to improve their methods. Unfortunately, the want of an accurate terminology is earnestly desired, as the common term peat is applied to many different articles, such as peat-fibre, turf, and peat-litter. To quote from his pamphlet, "The surface of a bog consists of pure sphagnum or peat-moss of other mosses, e.g., Hypnum, of flowering plants, such as Heather (*Erica*), *Vaccinium*, Cotton-sedge (*Eriophorum*), Beaked-sedge (*Rhynchospora*), Sedges, Rushes, certain grasses, Pines, &c.; the nature of the flora being dependent on the kind of bog, whether high peat-bogs (Hochmoor), fens (*Grünlandsmoor*), or Morasses (*Wiesenmoor*). Sphagnum and Heather are characteristic of the high peat-bogs, and are absent from the morasses where the moss, Hypnum, rushes, and sedges, are the chief representatives of the flora;" so that sphagnum-moss is the source of the best moss litter. It is needless to refer to the chief botanical characteristics, &c.; underneath the strata of Sphagnum lies the fibrous or intermediate turf, which is the layer more in request than other varieties. To again quote: "This fibrous peat is now utilised in quite a number of ways, adding largely to the economic value of a bog; it is in connection with the utilisation of fibrous peat that so much has been done

on the continent by a happy combination of chemist, engineer, and botanist. The machinery employed has been greatly improved, and skilled labour, so readily available abroad, has been largely utilised." I have often seen personally some specimens of peat in every way satisfactory to the needs of gardening; though some slight advances to utilise this for this purpose have been made, an apathetic feeling is unfortunately too prevalent. Another important feature of our bog-land is the abundance of *Eriophorum*; as this cotton-sedge is largely used in peat-wool, a product very common on the continent; it is also used in surgical dressings, being much more efficient than the old fashioned cotton-wool, besides its antiseptic qualities, it is also much lighter bulk for bulk; whilst carpets, roofings, &c., are some of the products which are manufactured from it. Though it may lack many qualities associated with such commodities, they however show how adaptable it is, requiring only experience to allocate its true worth in the formation of this fibre. There is a residuum of peat-dust which, when combined with coal and saw-dust, is made into briquettes or fire-lighters; it is also available for sanitary uses, and for packing fruit, &c.

HOW TO IMPROVE BOG-LAND.

The following is an outline of what is generally followed at Bernau, which is situated on the Chiemsee, a distance something like 80 miles south-east of Munich. We are again indebted to Professor Johnson's pamphlet: "The first object is to ascertain the cause of the water logging of the bog, and this discovered, the removal of the cause must be attempted. Causes of water logging: first, overflow of water into bog from higher points; secondly, overflow into bog from lower or deeper lying waters, through penning or flooding; thirdly, springs or ground water in the bog itself; fourthly, rainfall, and water-holding tendency of bog. One fact in connection to be borne in mind when a system of drainage is undertaken, the shrinkage of the bog which often amounts to 3 to 6 feet; also the relation of the surrounding land becomes materially altered by this bog shrinkage, so that, if the bog sinks materially below the surface of the land, it will be always liable to get water-logged from natural infiltration, compelling the following precautions to be observed: 'The depth of the layer, the shrinkage is the greater, the greater the layer; secondly, the physical state of the turf, looser, little decomposed turf shrinks more; also pure turf shrinks more than turf mixed with mineral matter; thirdly, in many cases the living plant-covering exercises an influence on the shrinkage of the bog, especially on meadow-bogs overgrown in parts with high moor plants, the Sphagnums, &c.; fourthly, the bog substratum has also an important effect on the drainage. A bog with a readily permeable sandy substratum needs less drainage than one with an impermeable loamy or clayey substratum.' As this question of drainage is yet unsettled both regarding bogs, for example high or sphagnum-moss or meadow bogs, in presence of this lacuna of knowledge, Professors Baumann and Tubeuf advise the following generalisations to be kept prominently in view when an effective system of drainage is contemplated:—First, local investigation of the relations of the natural drainage of water-flow, survey of the bog and its immediate surroundings; secondly, determination of the thickness of the bog in its different parts; thirdly, investigation of the physical state of the turf, its degree of sponginess, state of decomposition, and in connection with these the water-holding and water-conducting power of the soil; fourthly, observation of the vegetation; fifthly, determination of the state of the bog substratum in its different parts."

After the process of drainage is effected, they require a thorough manuring. Professor Baumann, in speaking on this aspect of the question, states "that during the past 100 years want and famine have given those living on bogs proof enough that the bog-soil requires an abundant supply of plant-

food, such as lime, potash, phosphoric acid, and nitrogen; but, as many bogs are in some rich of these manurial agents, and lamentably deficient in others, in order that the greatest results may accrue to their labours, Baumann advises every bog-owner or agriculturist to have a chemical analysis made of his property, thereby arming him with the requisite knowledge. Thus, in manuring, the necessary preliminary measures to be considered are: firstly, determination of the nature of the vegetation of the bog in its various parts, chart in hand (this is to enable the cultivator to know what kind of vegetation his land is comprised of, also to be able to gauge the quantity of fertilisers required); secondly: chemical analysis; thirdly: volumetric weight determination of the surface layer (root layer), based on the chemical analysis; fourthly: manure experiments by planting.

When the above measures have reached completeness, it will be requisite to know the best form of cultivation, the one generally adopted is known as Rimpan's "bog ridge cultivation," this means that the bog is simply covered with a layer of sand several inches thick; the general rule, however, varies between four and five inches, the whole being manured with dressing of potash and phosphoric acid. However, though success has followed this method, yet many disasters have likewise to be chronicled, the great error committed being that the fertilisers to be employed should vary with the chemical condition of the bog; also their colleagues at the "Bureau Experimental Station" proved by successive experiments that Rimpan's "bog ridge cultivation" was unsuited to raw high bogs. Although this method is rather an expensive one, it would be well before embarking on such a scheme to let the following facts be borne in mind: "The depth of the bog in all its parts; secondly: the vegetation on its whole surface; thirdly: the degree of decomposition in the upper bog layer; fourthly: the fertility of the bog; fifthly: the mineral soil in its substratum and in its neighbourhood in reference to the adaptability of this as a covering material; sixthly, the presence or not of plant poisons (iron sulphate, free sulphuric acid, and sulphide of iron). The annual rainfall must be taken into account, in some cases it is so high as to make the applicability of the covering process questionable."

"The idea governing Rimpan's method is not that of cultivating the bog soil, but of building and working up a mineral soil laid on the bog soil to the depth of 4 to 6 inches. The water, lime, and nitrogen are to be supplied by the bog itself; the phosphoric acid and potash being supplied in the artificial manures." This method is much superior to the old way of mixing mineral soil with the bog, although it is by far the cheaper method; yet it gives no protection against early and late frosts such as the ridge form of cultivation provides for. But want of knowledge is still requisite, as there may be many places admirably suited; whilst if greater care was bestowed in making the prepared soil, the disadvantages which are levelled against it may possibly be amended. However, this aspect of the case, especially towards Ireland, whether success or failure would result, demands experiments by public bodies—a field where the new Board can apply its energies with very profitable results. There should also be introduced a staff similar to those on continental lines, enabling those interested to encourage this work. In dealing with the factor of harvesting peat, the method laid down by Professors Schlich and Fisher in the *Manual of Forestry* is recommended. Full details can be got from vol. v. of their work.

Apart from the botanical and economic value of peat, his pamphlet contains a vast quantity of information, also diagrams of machinery to be employed; and to those interested, a perusal would be found highly suggestive. It is published by the Royal Dublin Society.

POTATO BLIGHT.

Reports are to hand that the well-known fungus has made an appearance in county Limerick, the

crop at present affected is the early one, which is not a very heavy one. The weather for some time past has been very moist, which has helped the spread of the disease. Although it is yet too early to speak as to its extent, it would be advisable for the new Board to enforce restrictive measures in order to narrow the infested areas, otherwise it may create much havoc with the later Potato crops.

THE ROYAL BOTANIC GARDENS, GLASNEVIN.

The Water-Lilies, both inside, and in many of the lakes at Glasnevin, look remarkably well, thanks in part to the fine season; the Victoria regia is represented by several plants which are growing vigorously, and they are furnished with several flower-buds. In the adjoining lakelets *Nelumbiums*, especially *N. speciosum*, look well, and are showing a great quantity of bloom. *Cannas* occupy the available spots, their leafage and flowers adds to the appearance of the whole. In the lakes outside, *Nymphaea odorata* forms a very effective sight.

THE WEATHER.

The climatic conditions prevailing at the end of last month brought much rain, accompanied by thunderstorms, which has resulted in the ordinary Potato-disease attacking the haulm in the whole of the area encircling Dublin. Trees have been uprooted in the direction of Balbriggan. The rain fell in torrents on the 2nd inst., from the evening until the following day, and in many of the low-lying parts floods occurred, cereals were beaten down, and orchards suffered greatly, the ground being studded with immature fruit, Apples, Pears, and Plums. The days were warm, but towards evening the temperature fell considerably; the chilliness was very noticeable. A. O'Neill.

PLANT NOTES.

ABNORMAL GROWTH IN HYOPHORBE INDICA.

PALMS are but little given to exhibiting abnormal growth, and instances come rarely under our notice. A singular variation in the arrangement of the pinnae on a leaf of *Hyophorbe indica* (*Areca lutescens*) is kindly sent by Mr. J. O. Clarke, gr. to Ludwig Mond, Esq., The Poplars, Avenue Road, Regent's Park. Instead of the equal arrangement of the pinnae in two rows, one on each side of the stalk, the leaf-stalk is changed to an irregularly quadrangular form. At the base there are two rows of pinnae on the one side only; then two rows on each side, presenting the pinnae all round the stem. The upper portion changes to the normal two-sided arrangement, but each of the pinnae is formed of two pinnae joined together.

CANNA "BARONNE CLARA DE HIRSCH."

In this variety we have probably one of the most brilliant of the large-flowering *Cannas*. The plant is robust, and of easy cultivation. The spike is heavy, and consists of from twenty to thirty flowers of a vermilion colour; paler, and with a few darker flecks in the centre, and with bright yellow edges. Many of the flowers measure 5 ins. across, and have very broad petals, which are nicely crimped at the edges. The flower-spike has the characteristic fault of *Cannas* raised in recent years, and which breeders should strive to correct, and so enhance their usefulness as bedding-plants. It is too weak to uphold the flowers without support from stakes, which in this instance are difficult to adjust, owing to the crowded state of the flowers. Cultivators may also do something to remedy this defect, by growing the plants slowly, and with the fullest exposure to sunshine and air.

STAPELIA GIGANTEA.

This wonderful *Asclepiad*, though lacking any pretensions to beauty [?], is so remarkable in its way, that many would appreciate the interest it would afford them in growing it. It is a West African plant, with grey flowers 14 inches across, and marked

with wavy, transverse, broken and forked bars of dull red, the inner surface of the flower being covered with long, silky violet and grey hairs. A figure was given in these columns, p. 693, vol. vii., 1877. The flowers have a fetid odour, which is however not noticeable, save at close quarters; in fact, it is quite possible to enter a small house in which it is flowering and not notice this feature. The plant requires stove or warm temperate-house treatment during growth; it thrives best in a compost of equal parts rough loam and sand, and when suspended near a ventilator. It flowers best when the growths are allowed to hang in ropes from the sides of the pot. The plant is easily raised from seeds, and the seedlings flower the second year. Small pieces of the plant also root freely if the severed parts are dried and then planted in pure sand. (See fig. in *Gardeners' Chronicle*, 1877, vol. vii., p. 693.)

PHYLLOCACTUS CRENATUS.

This species is one of the best of the large-flowered set for forming big specimens. A plant in the form of a stiff bush a yard or more high, has recently made a fine display of large white flowers in the conservatory at Mandeville House. The individual flowers were very large, being nearly a foot in length, and as much across; they are really handsome, the delicate white petals and multitudinous stamens being thrown into high relief by the bronzy tint of the calyx segments. The flowers are devoid of scent, save a sappy odour when they first open, and they last for two days only. This plant has been used in evolving several of the garden forms of *Phyllocacti* we have to-day; crossed with the scarlet and crimson-flowered species it gives progeny of a tawny colour, and with considerable breadth of petal. To secure fine, healthy plants of this and other *Phyllocacti*, it is necessary to prune away all weak growths, and any growths that have flowered heavily, thereby directing the energies of the plant towards the formation of a few strong leads. Geo. B. Mallett, Isleworth.

THE ROCK GARDEN.

ZAUSCHNERIA CALIFORNICA.

THE later months of summer, and those of early autumn, are not those in which we can see the alpine-garden at its best. There is, indeed, a short-coming of flowers when we look at the beds and borders, and then at the rockeries. It thus becomes of importance to study and to find out the late-blooming plants which can be grown to make attractive and bright the collection of alpine flowers. Later we shall have the *Colchicums*, the *Croci*, and a few other bulbous plants; but as yet these are not in bloom, and we have to look to other plants for the bloom we desire. One of the most desirable of our autumn plants is *Zauschneria californica*, whose scarlet blooms look so well, and give such a welcome bit of colour on the rockeries in August and September. For some years I have held pessimistic views regarding this plant in northern gardens. One has been struggling to persuade it to flower; and, although it showed buds, all in vain, as these incipient blossoms never opened, even in the sunniest places at command. In time, however, one learned that more than one variety or species were in cultivation, and that one or more of these would bloom freely and successfully every year. After some trouble, a plant of an early-blooming form was obtained, and this season one can better understand why it gave so much satisfaction soon after it came into cultivation in this country, and also why there seemed to be so much diversity of experience and opinion regarding the *Zauschneria*. It was evident for a month or so before it bloomed that this plant was not the same as that which for years had proved so disappointing, by withholding from us its hoped-for blooms. The earlier variety is less pubescent than the other, and does not possess so stiff a habit of growth. The first flower opened with me this year on July 26, while even in the

warmest seasons of late years, the other did not give a single bloom. As this is written—in the beginning of August—it is giving a number of its bright red flowers, which are so welcome at this time. Both varieties have proved themselves perfectly hardy here, and one is gratified to be in possession at last of the form which flowers with freedom. [A beautiful plant in the north for cultivating near the coast in gardens. Ed.]

GENTIANA LINEARIS.

One sees so little of this beautiful Gentian that it seems advisable to ask that those who wish to have good alpine flowers should endeavour to secure it for their gardens. It has now been here for several years, and one has come to look forward with pleasurable anticipations to the time when it will give us its clustered heads of pretty deep blue flowers, lined with white. It reminds one much of that useful border Gentian, *G. asclepiadea*, but it is much better adapted for the rock-garden than its taller congener. Its dwarfer size and neater habit make it quite suited to the company of the smaller plants which usually appeal most to the cultivator of alpine. It is said to grow from 1 to 2 feet high, but an established plant here is only 9½ inches in height, though one would have expected it to grow to a greater height in a season such as this, when those of us who are in S.W. Scotland have had no reason to complain of excessive heat or drought, but have had, on the contrary, more than an average amount of rain. *Gentiana linearis* is grown on a sunny rockery, and in a compost of peat and loam; it presents a pretty picture, with its well-opened flowers. It comes from North America, and is said to be also known as *G. pseudo-pneumonanthe*. Possibly it might grow higher if planted in a bog, a position in which it is sometimes found in its native habitats. It is found from New Brunswick and Ontario to Maryland, and grows at a height of 5000 feet on the Adirondacks. One has every confidence in drawing the attention of growers to this pleasing member of a lovely class of plants.

SPIRÆA BULLATA.

We have few neater plants in bloom in the rock-garden in the end of July or the beginning of August than this little Japanese plant. Although fairly well known, and readily obtainable, either under the above name or that of *S. crispifolia*, it might yet be advantageously introduced into many more gardens. It is worthy of a prominent position, its neat habit, pretty foliage, and its deep crimson flowers, deeper in tint than those of *S. bumalda*. "Anthony Waterer," make it most pleasing. One is surprised to see that this little shrubby *Spiræa* is taken so little notice of in books devoted to plants suitable for the outdoor garden. It is quite hardy well to the north, and presents no difficulties in the way of cultivation in the rock-garden. It, however, appears to like a light soil, and a small plant will soon grow to a size which makes it quite ornamental. It grows here to little more than a foot high. *S. Arnott*.

SCOTLAND.

BORDER CARNATIONS.

WITH favourable weather during the blooming period, the present bids fair to be an exceptionally good Carnation year. Strong plants put out in the autumn received no appreciable check to growth, though the extreme drought in early summer seriously crippled spring-planted stuff which was not copiously watered. Through press of other work, I was this year somewhat later than usual in getting growths layered, it having been quite the middle of July before this important operation was overtaken; but the grass was in first-rate condition, and they will, I hope, turn out well-rooted stuff by the third week of August.

In Scotland we are obliged to be particular on the point of layering early, and it has become the recognised practice with those who wish to

grow Carnations successfully in the open, to layer at the earliest moment, in order to have strong plants to put out in the early part of September, so that they may become thoroughly established previous to the advent of winter. Such plants invariably pass through the trying spring months with little or no loss, and they are altogether superior as decorative subjects, on account of their largely increased flower production to later planted, as well as to spring-planted Carnations.

There is another practice that has been recommended by such famed cultivators as Mr. Douglas and Mr. Martin Smith, which I should hesitate either to follow myself, or to recommend anyone to entertain. I refer to burying a layer of dung under the plants. Soils, of course, vary, and cultural treatment suitable to one soil may prove quite unsuitable to another, and perhaps also climate may have a qualifying effect on the capacity of the plant to appropriate manures. But when one finds that the Carnation succeeds perfectly in ground in what we term "good heart," and which has borne one or more crops subsequent to the application of manure, the necessity of enriching the soil in a manner required by only a few rank-growing vegetables is not so apparent.

A slight surface-dressing of sandy compost, about 2 inches in thickness, worked into the upper 4 inches of soil, is distinctly beneficial as a promoter of root-action in late autumn; and the necessary manurial aid is safely applied in spring and early summer, when it is required, in the form of slight surface-dressings. It is by no means important what the manure is, so long as it is cleanly and of fairly rapid action. The present year, for instance, our beds were dressed with a thin sprinkling of pigeon-manure applied early in April, and this was supplemented in June by a slight dressing of superphosphate, which was watered in, and more than that they certainly do not require.

There is, too, the question of variety to be considered in the open-air culture of the Carnation, many sorts being constitutionally unfitted for this treatment. Some years they may do well, once they have been well established, but there is no doubt that a section is best confined to pot-culture entirely, or if planted out, they ought to be perpetuated by means of layers taken off pot-plants, which produce, if less strong, more healthy layers. We may take the old Germania as an example of those varieties which cannot be cultivated entirely out-of-doors. Some years, no matter how healthy the plants, the weather spoils the blooms, and in others the grass is rusted so badly that it is valueless for propagation. It must remain with every one individually to choose whether it is worth while to cultivate these unreliable sorts in the open; personally, I think it is better to confine them solely to pot-culture, and to grow in the open only rudely vigorous kinds, that are almost certain to succeed. Of these, there is now, in addition to old varieties, such as Ruby and Vivid, a large number of very fine sorts, constitutionally vigorous, free-flowering, and of a good stiff habit of growth, and embracing colours of all shades.

But even the strongest-growing varieties are apt to deteriorate when grown for years on the same ground, and in such cases it is a good policy to introduce fresh plants from a distance, as layers from pot-plants though undoubtedly superior in many instances to out-of-door ones, cannot be depended on to give such good results as strong imported plants.

There is yet the plan of growing the Carnation as a perennial, which, where it succeeds and proper attention given to thinning the grass, yields very good results. The plants are necessarily less strong than yearlings, and where the latter are well cultivated, a less quantity of bloom is produced; but in many soils, old plants may certainly be recommended as a useful method of culture. The varieties require, however, to be selected, and those which naturally produce grass low on the plant are the ones that succeed best. One of the

greatest drawbacks to growing Carnations on, year after year, is the regrettable way plants turn yellow in summer and die off. As just noted, selection must be strict, and all weakly and too thickly growths cut out, in order that those left may have space to grow and ripen sufficiently for each to bloom the year succeeding. What manure they receive should be applied in April as a slight surface-dressing, and if water is required in summer, weak manure-water should be given in preference to pure water. But the application of manure to Carnations should always be made with caution, and it is better to err in giving too little than to batten them with material that is certain to induce attacks of disease. *R. P. Brotherton, East Lothian.*

FRUIT REGISTER.

LATE CHERRIES.

HAVING a lively recollection of the very fine sample of Cherries of the variety Noble shown the other day at the Drill Hall from Kent, I was rather surprised to find to-day (August 4), in our Kingston Market, large quantities of a blackish-red Sweet Cherry exactly like Noble in appearance, though not quite so fine as was the Kent sample. In form, colour, character of flesh, and indeed in every respect, except not quite so large, this market sample seemed to be an exact duplicate of the new variety. Now this capital late black Cherry could be purchased by bushels at 4d. per lb.—certainly very cheap. A better late black Cherry I could not wish for. Now what Cherry is this? I asked one vendor what it was known as, and he said Turks; meaning thereby, no doubt, Turkey Heart. That variety, I observe, Mr. George Bunyard classes with Black Cluster, and refers to it as a prolific orchard variety, but that the fruit is small; well, the fruit of my variety was not small, but of good size. Then I observe that in the *Fruit Manual*, Dr. Hogg has classed Turkey Heart with the Bigarreau, which is a light-coloured variety—who is right? Can the Cherry I refer to be Tradescant's Heart, which Mr. Bunyard classes with St. Margarets, whilst Dr. Hogg regards the first name as the rightful one, classing St. Margarets with that? This is a fine late Cherry, ripening at the end of July and early in August; and it was said at the Drill Hall that Noble closely resembled it. But I do not know whether it is a good or popular orchard Cherry. But Kerr's Black Heart is a good late and fine variety also; but Cherries have such close resemblances in form and colour that they are difficult to distinguish. Still, really late sweet Cherries are few, and it should not be difficult to determine the market variety named. A fair-sized fruit, measured both ways exactly 2½ inches; that is not small. *A. D.*

ALPINE GARDENS.

At this season many of our readers are visiting the High Alps, and among them a large proportion takes interest in the wild plants and their distribution. Some of these botanists have a prejudice against a "garden," or against "cultivated" plants, in such a connection. We think that prejudice would wear off, and things be seen in their true proportions, if they visited the alpine-garden established by M. Correvon and others on the slopes of the Great St. Bernard. Here may be seen alpine plants which are cultivated with difficulty at lower levels; and not only are Swiss plants specially represented, but separate rock-borders are devoted to the plants of the Caucasus, the Himalayas, and other ranges. By means of this garden, seeds and specimens may be obtained by subscribers; and by their distribution, the risk of extinction is materially lessened. Our illustration (fig. 28, p. 107) shows one of many rock-borders, and will give an idea of the beauty and interest of such constructions.

THE HERBACEOUS BORDER.

ISATIS GLAUCA.

AMONG the plants for which some of us were indebted several years ago to Mr. Edward Whittall, of Smyrna, is *Isatis glauca*, a Cruciferous plant not generally known. Seeds of it received from Smyrna did not grow with me, but through the kindness of a correspondent, I became the possessor of a plant this year. It is now in bloom, and bears out all that my good correspondent said in favour of it; it is certainly very distinct from any other plant now in bloom here, or that one has seen elsewhere among large collections. It has been exhibited once or twice at York, I believe,

THE CULTIVATION OF THE PEACH.*

(Continued from p. 83.)

VARIETIES.—A good selection of Peaches to start with in their order of ripening, are:—

Alexandra.—A large, handsome, and highly-coloured fruit, flesh juicy and sweet; it ripens about the middle of July.

Waterloo.—A fine American Peach of medium size, valuable on account of its earliness. I have not been altogether successful with it under glass, but it is a splendid out door Peach, ripening in the middle of July.

Hale's Early is a great favourite of mine, both under glass and in the open, of medium size, and

Dymond.—An exceedingly fine, large, and deliciously flavoured variety. Tree, hardy and prolific. Fruit ripens in the middle of September.

Violette Hâtive.—Forces well, and is one of the hardest Peaches grown. It is very prolific, the fruit being large and excellent. It ripens in the middle of September.

Barrington.—A large and vigorous kind, ripening about the end of September; vigorous grower, and a good bearer.

Sea Eagle.—One of the best late Peaches, large, and highly flavoured fruit.

Princess of Wales.—A valuable late Peach with very large fruit, which is ripe at the end of September.



FIG. 28.—A VIEW IN THE ALPINE GARDEN, "LINNÆA."

and probably elsewhere, and it was so much admired that the exhibitor had recently an offer for his stock from a hardy plant nurseryman, so that it will probably be in commerce very soon. It is, of course, a near relative of the biennial, *I. tinctoria*, the common Dyer's Woad; but it is a true perennial, and a desirable border plant. This year it has grown to about 3 feet in height, but as it becomes established it will probably reach to 4 feet high. The stem is clothed with a number of lanceolate leaves of a glaucous green, with a white central rib. The light, yet bright yellow, small flowers are borne in a large, loose raceme, and produce a good effect at a season when we can well do with flowers of its character in the border; it is, I understand, perfectly hardy. *S. Arnott, Carsethorn-by-Dumfries, N.B.*

handsome; it is one of the best. It ripens at the beginning of August.

Dr. Hogg.—Good both inside and out, a rich flavoured fruit; it ripens at the beginning of August.

Grosse Mignonne.—This is a splendid mid-season Peach, one of the best in cultivation, either for forcing or in the open, fruit large and highly coloured; ripens the end of August.

Noblesse.—A most valuable variety, fruit exceedingly juicy and rich. This tree is subject to mildew, it forces well, and is also a good out-door Peach; ripens at the end of August.

* Extracts from a lecture given by Mr. G. Carpenter, West Hall Gardens, Byfleet, Weybridge, before the Woking Horticultural Society, on May 7 last.

More could be added, and other good varieties named, many perhaps which would be preferred to those I have mentioned. My endeavour has been, however, to give fruits which will ripen in turn from the middle of July to the end of September, and thus spread out the season as long as possible.

NECTARINES.

Of Nectarines, or smooth skinned Peaches, I will name in order of ripening the following:—

Lord Napier.—A large and handsome variety, ripening early in August; the fruit is tender, rich, and of excellent flavour. This is one of the largest and best Nectarines.

Rivers' Early Orange.—A splendid early Nectarine; ripens in the middle of August.

Stanwick Elruge.—A seedling, raised from Stanwick and Elruge Nectarines; ripens at the middle of August.

Violette Hâtive.—Ripens at the end of August; a good variety for either outdoor culture or forcing.

Humboldt.—A very highly-coloured and richly-flavoured fruit, a very free bearer, ripening early in September.

Pine-apple.—Very rich and exquisitely flavoured, ripening about the middle of September.

Victoria.—Ripens about the end of September, an excellent late variety.

Other good varieties are Dryden, Elruge, Hardwick Seedling, Pitmaston Orange, and Spencer.

INSECTS.

The worst insect enemies of the Peach-tree are aphides, but now such good insecticides are procurable, no harm need be done by them. It will soon be seen if the tree is infected with fly of any kind; the leaves will begin to curl, and if not attended to, will turn yellow and fall off.

Among other injurious insects that attack the Peach-tree, are *Anarsia lineatella*, a small moth; this, in spring or early summer, deposits its larvæ on the tips of the shoots or branches, which it destroys by boring into them, and eating the pith, while the autumn brood eat into the fruit. Earwigs and ants are most destructive at times to ripe fruit. The former may be trapped by laying pieces of hollow bean-stalks about among the branches, and frequently looking over them and destroying those that shelter within. The ants may be greatly reduced by pouring hot water over them, or by dusting with soot; chalk also they will not pass. Red-spider and thrip can also be kept down by occasional applications of XL-All, using one gallon to forty of water, and by frequent use of the syringe during the growing season. Mildew is sometimes destructive to the young growth; the immediate application of flowers-of-sulphur is the best remedy.

Peach borders should never be allowed to get dry, although at certain times, more water will be required than others. In making a border, old mortar rubbish is an excellent thing to mix with the soil, as it will help to keep the border sweet, and also assist the fruit at stoning time. I have only referred to the cultivation of the fruit under glass very briefly, as it would take up too much time, and tire you too much to describe it fully now. The chief object in reading this paper is to try and revive the out-door cultivation of the Peach, and secure its proper treatment.

I am certain that anyone who has the convenience of any protection whatever, and will give it a fair trial, will be perfectly satisfied with the results. Nothing whatever can be grown successfully without care and attention.

THE WEATHER IN WEST HERTS.

A WEEK of cold and stormy weather. On no day did the temperature in shade exceed 70°, and on the 5th rose only to 59°, while all the nights were more or less cold for the time of year. The ground temperatures have consequently fallen considerably, the reading at 2 feet deep being at the present time of about seasonable warmth, but at 1 foot deep, about 3° colder than the average. Rain fell on five days of the week, and to the total depth of 1½ inches. Of this amount, rather more than an inch (equivalent to about 5 gallons on each square yard of surface in my garden) has found its way through the 2½ ft. of soil in the uncropped percolation gauge, but none at all has as yet come through the gauge containing the same depth of soil on which short grass is growing. It is now nearly fifteen weeks since any rain water came through the latter gauge, with the exception of a few drops in the middle of July. The winds were, as a rule, very high during the week, and on two occasions reached the force of a moderate gale—direction west. The record of bright sunshine proved poor, averaging only about 4½ hours a day. *E. M., Berkhamstead, Aug. 7.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

The Planting of Strawberries.—The new-dug ground being now in good order for being planted, the operation may be carried out forthwith, as the sooner this is done, the greater the probability of a fine crop of fruit next season. In order to obtain Strawberries for as long a period as possible, the early varieties should be planted on south borders, and the second early and main crop varieties in the open quarters, and a portion of the late varieties on north and west borders. Assuming that the ground has been dug, and otherwise got in readiness, let it be levelled and raked to a fine tilth, and then trodden in two directions evenly and uniformly, and again raked smooth. For plants which will be destroyed after fruiting twice, the rows may be at 2 feet apart, and for a longer period 3 feet is not too much. The plants in the rows should be set out 1½ ft. apart. Having finished the preparation of the beds, afford the plants water several hours previously to planting them. In planting, the trowel should be used, and each plant set sufficiently deep to cover the ball; make the soil firm about the plants, and finish with a light tramping of the soil. If dry weather prevails, strict attention should be paid to affording water to the newly set-out plants. As a means of retaining moisture in the soil, a mulch with Mushroom-bed materials or hotbed manure may be placed alongside of the rows.

This year's Grafted-trees.—The ligatures may now be removed, these doing more harm than good after this date; but let the supporting sticks remain, and secure the growing shoots to these so as to prevent loss by wind. The shoots from grafts on wall-trees should be neatly tacked in. When shoots from grafts reach 3 to 4 feet in length, their points may be pinched out, and any later breaks should be pinched back to the lowermost leaf. An exception should be made in this case of trees intended for forming cordons, which should be permitted to extend without any stopping of the points at this season.

Budding.—At the present time the budding of Stocks may be commenced. The rule is for one man (who should be an expert knifeman), to do the budding, and another or a lad to follow putting the necessary ligatures round the buds. The shoots from which the buds are taken should be always kept in a vessel of water.

Early Fruits.—The early ripening Apples, as Juneating and Mr. Gladstone, and early Rivers Prolific Plum, should be netted in gardens where fruit-eating birds abound. Let supports, either as crutches or stout cords attached to a central pole placed in the middle of the head, be afforded to all heavily weighted branches.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Olare Lawn, East Sheen, S.W.

Laelia pumila and its varieties, L. p. Dayana and L. p. praestans, are free-flowering, the flowers are handsome and brightly-coloured, and their habit is dwarf and compact, which renders them suitable for hanging in low houses. Since the early spring, the plants will have been kept in cool, airy structures, and afforded as much water as has prevented undue shrivelling. These plants are now making new growth, and more water should be applied at the roots; before, however, doing this, let their condition be ascertained. Those having ample room which are in good condition may have a little of the surface materials picked off, and replaced with fresh peat and sphagnum-moss; whilst those in an unsound state, or which are in need of more pot-room, should be repotted. Small pans with perforated sides, and having wires attached for suspending, are best for these; these should be more than half filled with crocks, and be finished off with peat and moss mixed in about equal proportions. When a plant is repotted, afford water with a rose-can, and until they are re-established, an occasional sprinkling of the surface will supply sufficient moisture. The plants which are not disturbed should be afforded more liberal treatment. It is advisable, so far as *L. pumila* and the variety *praestans* are concerned,

to place them in a house that is kept closer than that in which they were previously placed; but *L. p. Dayana*, on the contrary, may remain in an intermediate-house. Numerous hybrids, having one or the other of the above-named species as one of their parents, will need modifications of the treatment usually required by their respective parents, in accordance with their resemblances and chief affinities. One of the finest of this class is *L.-c. × Ingrami*, a cross between *L. pumila* and *Cattleya aurea*. The latter species is not an easy plant to cultivate, but influenced by *L. pumila*, the hybrid is readily amenable to ordinary treatment when placed in a warm part of a *Cattleya*-house, and water freely applied to it when it is growing (an almost perpetual condition), and kept moderately dry when inactive.

Laelia Jongheana may be said to be a form of *L. pumila*, so far as its cultural requirements are concerned, the only difference being, so far as my experience goes, that it will endure stronger sunlight and a higher temperature than are found desirable with *L. pumila*.

Sophranitis grandiflora is now making a renewal of growth, after long period of rest. The materials at the roots should therefore be examined, all dead sphagnum-moss being removed, where possible, as well as decayed peat, and fresh materials afforded. Overgrown plants should be given larger pots or pans, carefully breaking the old ones, but not removing the pieces to which roots are adhering. Afford good drainage nearly to the rim, and a loose surfacing of peat and fresh-gathered sphagnum-moss. Plants which have to be disturbed in this manner, should have water carefully afforded afterwards; and the remainder, from now until the tiny bulbs are fully grown, should not be allowed to get dry at the root. A cool, moist, airy house, rather densely shaded, is the most suitable place for them, if they can be brought within a few feet of the roof, the flowers being larger and of higher colour than on plants grown in a *Cattleya*-house.

Sophranitis violacea, a difficult plant to retain in a healthy condition, may be grown on a suspended piece of bark or board, with just a few heads of moss distributed about it, and placed in a light part of the *Odontoglossum*-house, and be afforded water frequently when making roots, but seldom when at rest. *S. cernua* is another refractory subject that requires similar treatment.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Onions.—The crop of autumn-sown Onions, the tops which were laid down in June, being now ready for harvesting, the work should receive attention without unnecessary delay, as to leave them in the ground during rainy weather is apt to cause the decay of the base of the bulbs. When pulled, spread them out evenly, bottom upwards on hurdles, boards, or if needs must on the soil. If only a small quantity is grown, the bulbs may be spread out in empty forcing-pits or in cold-frames. When the tops are dried, rope and suspend them in an airy shed, &c.

Corn-salad.—Although this is not in much demand when Lettuces and Endives are obtainable, it is a valuable salad plant in places where much salad material is consumed, making up for deficiencies in other things and affording an agreeable change. Two sowings will suffice, viz., one in the course of the next week, and another at the beginning of the month of September. If *Corn-salad* be called for in the winter and spring, seeds may be sown at intervals of three weeks from this date till the beginning of November. The bed should be in the open quarter, and the soil well manured if necessary, and deeply dug. Sow thinly in drills at 9 inches apart, and afford the same water till the crop is ready for use. I am aware that some growers prefer the method of broadcasting the seeds, but the plants can be more easily thinned and the plot kept clean if sown in drills. When severe weather sets in, let the ground be covered with dry litter.

Mushrooms.—Now that the outdoor supply has become nearly exhausted, indoor beds should be made up. As the different methods of constructing the beds were given in detail in the early part of the year, I need only add that the great point in *Mushroom*-culture is to keep the beds as much as

possible at an even temperature. If new spawn be used, less will be required, as it spreads more freely than that which is old. Before making new beds in the Mushroom-house, the place should be thoroughly cleansed and the walls white-washed, nothing being left in that will afford a harbour for woodlice, &c.

Tomatos.—If fruit is required early in the spring, seed should now be sown, or cuttings taken and struck in heat. The latter method is perhaps more often adopted, as cuttings soon make roots if kept close in moderate heat, and the plants being less vigorous, require less space than seedlings. Large 60-sized pots are suitable for striking the cuttings, and these should be filled with a compost consisting of loam, leaf-mould, $\frac{1}{2}$ -inch bones, and a small quantity of lime-rubble. Seed may be sown in the same sort of compost, the seeds being sown very thinly in seed-pans, &c. The young plants should be removed to a frame, and well ventilated in fine weather. Plants for furnishing the winter supply of fruits should now receive their last potting. As only strong plants repay the grower, all weakly and backward plants should be discarded. The most suitable size of pot is one of 9 inches, and these should be filled with a moderately rich compost, which should be made very firm round the ball with the potting-stick. These plants should be placed in a sunny position out-of-doors, and by the end of the month of September they should be well set with fruit. The plants require strong stakes, to be kept to one stem. Precautions should be taken to prevent the plants being overturned, or otherwise damaged by wind. In hot weather the plants should be slightly damped in the cool of the evening, but should not be afforded much water at the root, or disease will attack them.

Chervil.—It is rare that a supply of this pot-herb is needed throughout the winter and spring, but where such a demand exists, one or two sowings should be made at intervals of three weeks or a month, the first being made on a south border, and the later ones in a cold frame. The curled variety of Chervil is valuable for garnishing purposes when Parsley is scarce. To grow both varieties well, it is necessary to apply a good dressing of slaked lime before sowing the seed in shallow drills, drawn about 8 inches apart.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Pot-trees of the Peach and Nectarine.—Now that the cultivation of hardy fruits in pots is getting to be better understood, an increase in the numbers grown is taking place in many gardens. A comparison made with the yield from trained and pot-trees, in two houses of equal capacity, would be much in favour of the pot-trees, and although the labour of affording water is greater with trees in pots, training is much more quickly performed. Another point in its favour is, that the fruit-house is valuable as affording a place for successional crops. I would advise all who contemplate taking up the pot-culture of fruit-trees, to purchase the latter at the present time, in preference to later, so much depending upon the right kind of treatment afforded them from this season until the fall of the leaf. The buyer is better enabled to judge of their condition, and of the prospects of a crop of fruit next year. The lower branches of a tree should be stronger than the upper ones, otherwise the tree will soon lose the pyramid form, and become a round-headed standard. Trees for early forcing should ere this have ceased to extend their shoots; such ought to be the condition of trees early forced this year. Let such trees be placed in the shade out-of-doors to mature their shoots, being copiously syringed for a few days after removal from the house, in order to prevent a too rapid evaporation of moisture by the leaves; and after a few days put them in a sunny spot for a period of about six weeks. Every pot fruit-tree should be repotted before the end of the month of October, the soil having been exhausted of plant food, which no amount of liquid-manure will restore, besides the drainage will need putting in order. Turfy-loam with crushed bones, charred soil and mortar-rubble, form the best potting mixture for fruit-trees. The addition of some chalk makes it suitable for Figs. In selecting trees for the first potting, choose only such as have forward buds, healthy foliage, and which are free from watery shoots. It is better not to use over-large pots, but they should be of sufficient capacity

to take the ball without much reduction of its size, leading to a premature fall of the leaf, and weakening of the buds. The trees should be frequently syringed, and also shaded from strong sunshine for a week or two after root disturbance, affording full exposure in a sheltered position afterwards. All pots and drainage should be clean, and the latter fairly abundant.

Varieties for Pot Culture.—Peaches: Waterloo, Hale's Early, Early Alfred, Crimson Galande, and Bellegarde. Nectarines: Cardinal, Early Rivers, Lord Napier, Stanwick Elrige, and Victoria. Plums: Early Transparent Gage, Golden Esperen, Denniston's Superb, Kirke's, Jefferson's, and Bryanston Gage. Pears: Clapp's Favourite, Beurré d'Amanlis, Princess, Conseiller de la Cour, Doyenné du Comice, and Marie Benoist. Apples: Mr. Gladstone, Lady Sudeley, Cox's Orange Pippin, Ribston Pippin, Wealthy, White Calville, and Northern Spy.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Ilchester, Abbotsbury Castle, Dorsetshire.

Ornamental Shrubs.—The weather in most parts of the country has hitherto been favourable to the recovery of newly-planted shrubs, and where the soil has been moved by the hoe and mulching applied, the plants have the look of health. The more recent rains will have rendered the application of water unnecessary this year, excepting in unusually dry districts and soils. The stakes and ties of such shrubs should be examined to ascertain that they are secure, and good enough to last through the winter, and that no chafing of the bark is occurring. This is particularly necessary in seaside gardens.

Evergreen Shrubs.—The ground should now be prepared for planting, and recent rains will have rendered digging an easier matter than some weeks ago. Bastard trenching, that is one full spit, and top and bottom shovellings, is a good sort of preparation, aerating the soil for 1 foot or more in depth. A square piece of coarse canvas with cords tied at the corners and crossing each other, through which a pole is passed, is useful in transplanting heavy balls not easily loaded on a hand-barrow or high truck, it being readily passed under a ball.

Laurels should now be pruned, using a strong knife, and cutting out regularly the coarser shoots to one or two buds. Do not, however, cut the smaller shoots, or a wall-like appearance will be given these shrubs. The leaves must not be mutilated, which is one reason why shears should not be used.

Box-edging may now be clipped, and should the paths consist of loose shell, beach or sand, this should be scraped back from the Box for 1 foot in width, in order to be enabled to gather up the clippings cleanly. Box-edging should be cut on dull days with a pair of hedging-shears kept well sharpened, so as not to bruise the shoots and foliage.

Grass Verges.—These will require a weekly shearing at the sides. If the paths are mossy, draw a sharp toothed-rake or hard besom over them previously to employing a weed-killer. This loosening of the surface prevents the weed-killer running to the sides and killing living edgings.

Sub-tropical Plants.—Plants of Camellia, Indian Azalea, Pampas-grass, Eulalia, Himalayan Rhododendron, Benthamia or Cornus fragifera, Aralia Sieboldi, Dracæna indivisa, and Cordylina australis, if newly planted, should be sprayed over during hot, dry weather in the evening or early morning, using diluted cow-shed drainings to any specimens showing signs of exhaustion. Pampas and Eulalias can scarcely be afforded too much manure-water of this kind when about to push up their inflorescences. Established plants here of both species often produce forty to fifty spikes.

Dracæna indivisa plants are loaded with their thong-like risps of seed-vessels, which some kinds of birds devour readily, and like the Berberis, they should be kept from them by means of fine-meshed netting if the seed is wanted for any purpose. Dracænas and Cordylines are handsome half-hardy plants, for which many sheltered nooks near the southern and western sea-coasts could be found where they would do well. Here, these species are invaluable, the leaves furnishing us with all that is required for tying plants. For this purpose the leaves are cut from the base annually,

which if left would only turn brown as the specimens develop new growth. Even when killed by frost to the ground-level the large tooth-shaped roots soon send up off-sets, which grow fast, and may be planted in the shrubberies if so desired. Seeds should be sown when ripe, and placed in slight bottom-heat.

Narcissus.—The early Polyanthus Narcissus should now be planted in well-prepared rich sandy-loam, with full exposure to the sun if early blossoms are desired. Warm banks suit these well if the soil be in good heart. Draw with a large hoe drills of sufficient depth to prevent the bulbs being disturbed by surface-hoeing. A useful succession of flowers for cutting is obtained from mixed plantings, but if masses of colour are wished for on the turf or elsewhere, varieties should be kept by themselves in groups, lines, clumps, &c. To follow the Polyanthus varieties, plant the double N. poeticus and N. biflorus in succession. If planted during the present month the blossoms come strong, the bulbs commencing to root forthwith.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

Eucharis grandiflora.—Bulbs which have finished their growth, if required for early winter flowering, should be removed to an intermediate-house, and be afforded rest for a space of six or eight weeks. During that time no manure and much less water will be required, but they should not be dried off as is usual with many species of bulbs. Afford the plants shade from direct sunshine, and avoid sudden changes of temperature. The same kind of treatment will be found suitable for the different species of Hymenocallis. Pancratiums should be maintained in a growing state, and when this is the system, and there exists a good stock of plants, flowers are obtainable for the greater part of the year for decoration or for cutting and making up in bouquets or wreaths. No flowers are so chaste and beautiful as those above named, and, generally speaking, single flowers for wreaths are more effective than double ones; though where colours are permitted, bronze and yellow Chrysanthemums with autumn-tinted foliage, or that of some of the Codæums, harmonise admirably.

Gardenias.—The final repotting should now be afforded to all of the spring-struck plants, putting them into 6-inch pots. Let the potting be done moderately firm, using a compost consisting of equal parts peat and loam, with a sprinkling of bone-meal and silver-sand. The plants should be kept close to the glass, syringed freely, and not shaded.

Gesneras.—These plants being in a fit state to be placed in their flowering pots, using a potting mixture of peat, leaf-mould, and loam in equal parts, and plenty of sharp sand. When potting the plants, the gardener should be careful not to bruise or break the foliage; space for affording a top-dressing later should be left. Place the plants when potted in the stove, or a low span-roofed pit, where they will not be far removed from the roof. Water should be sparingly applied for a time after repotting. The plants must not be syringed.

Epiphyllums in variety having finished their growth, may be placed in a cold pit, fully exposed to the sun, the sashes being removed during fine weather.

Zonal Pelargoniums for Winter-flowering.—As soon as the roots of these plants have reached the sides of the pots, a sprinkling of some kind of artificial fertiliser should be applied, and all the flowers removed, as well as the points of very strong shoots. Let the plants stand thinly, and free all round, turning them occasionally. The plants should be examined at least three times a day during hot weather, so that they do not suffer lack of water at the root.

Crassula coccinea.—Cuttings inserted to the number of four or five in a large 60, in sandy soil, readily make roots if not afforded much water. A cold pit or frame placed in a shady position will be found suitable until rooted; and when rooted, pot them in 48's, and place for the winter on shelves in the greenhouse.

THE FENN TRIBUTE.—We have to acknowledge the receipt of a cheque for £5 5s., from G. F. WILSON, Esq., F.R.S., Weybridge, on behalf of this fund.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the **EDITOR, 41, Wellington Street, Covent Garden, London**. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Aug. 14 { Royal Horticultural Society's Committee, Meeting.
WEDNESDAY, Aug. 15 { Eastbourne Horticultural Society's Show.
THURSDAY, Aug. 16 { Swansea Horticultural Society's Show.

SALES.

FRIDAY, AUGUST 17.—Imported and Established Orchids, *Lilium Harrisii*, Roman Hyacinths, Palm Seeds, Narcissus, &c., at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—62° 9'.

ACTUAL TEMPERATURES:—

LONDON.—August 8 (6 P.M.): Max. 64°; Min. 54°.

August 9: Dull, rainy, cold.

PROVINCES.—August 8 (6 P.M.): Max. 63°, South-east Counties; Min., 53°, Shetland.

MUCH has been written of the pleasures associated with the pursuit of gardening; but its penalties have been almost entirely ignored. Nothing can damp the enthusiasm of its advocates; there is no sorrow associated therewith that their remembrance can recall. It was SOCRATES, we think, who wrote of double blessedness: "If you marry, you will repent it; and if you do not, you will repent it;" and the same advice may be given to those about to enter earnestly upon the horticultural life. It is a great responsibility to have charge of a large and (potentially) beautiful garden, which has many visitors during the season of flowers and fruit; who, though they may not be too critical in your immediate presence, may yet be very emphatically so, when, disappointed with what they came to contemplate, they have retired from your view. They came, perhaps, with great expectations, for whose existence you were partly responsible, and which, saddening to relate, have not been fulfilled. But they do not consider that you are hardly to blame for the "washed-out" condition of your earthly paradise in a season such as this. Nature, like that memorable creation of DICKENS, viz., Captain Cuttle's landlady, Mrs. McStinger, has her great washing-days, somewhat trying to her constitution; and her subjects, like the humble captain, have to suffer the consequences. After a visitation such as we have recently experienced of the annual "Lammas floods," accompanied, in all probability, by fierce south-easterly winds, you go into your garden of an early autumn morning, and you find that your Roses, in a literal as well as a metaphorical sense, have "gone to the wall." Many of your finest climbers, suddenly succumbing to the pressure of the storm, and the weight and violence of the rain, have been blown to the ground. The entire blooms of your garden, Roses, Lilies, Sweet Peas, Violas,

Irises, Delphiniums, Gladioli, and Carnations, have been utterly destroyed; and nothing remains to their fond cultivator, whose gaze only yesterday was riveted by their beauty, but to remove them from the parent plants as speedily and effectively as lies within his power. Even this, as most of us know from experience, is a serious operation, or at least a very tedious and irritating one; making immense demands upon the divine faculty of patience, while at the same time it makes havoc of the fair element of hope. But Hope, as the optimistic poet has sung, "springs eternal in the human breast;" and though a thousand magnificent flowers have been swept to desolation on the wings of the shower-laden, remorseless blasts, as many buds, full of embryonic life and potential loveliness, remain. But what of that, if these are destined by Nature to endure a similarly crucial experience, as soon as they have spread their silken petals to the air, and dedicated their beauty to the sun?

To preserve a garden in all its possible integrity and symmetry, under such atmospheric conditions as we have endeavoured to describe, is a perfect impossibility; in many instances you feel almost paralysed by the sad destruction of your treasures which the elements have wrought. Nature, so long your sympathetic friend, and gentle inspirer, is now your enemy; in her amiable moments, she had looked like the innocent flowers she was preparing to destroy, but the serpent of deceit was lurking invisibly there. The great WORDSWORTH, indeed, has asserted of Nature (in all probability when he was experiencing on a calm evening her benignant influence during his famous visit to the regions of Tintern Abbey), that "she never did betray the heart that loved her"; and there can be no question that she usually, though not always, gives warning before she strikes. But what of all this, when she strikes so very hard? Her fairest creations of the gardens, and of the fields; the golden corn that is ruthlessly swept by her autumnal floods, and levelled to the ground; her loftiest trees, which are prematurely divested of their large and lustrous leaves; the fair fruits that are severed, unripened, from the pendulous boughs; the flowers that too early anticipate their decay; receive for the most part no mercy from Nature when she is suddenly seized with such impetuous moods.

But even Nature, with all her unconscious cruelty, can repent; and though often for the horticulturist her repentance comes too late. And then we experience the full significance of those Arnoldian words—

"Sad Patience, too near neighbour to Despair!"

Sale of Poisons for Technical or Trade Purposes. THE action of the Pharmaceutical Society in endeavouring to obtain a monopoly of the sale of poisons for horticultural and agricultural purposes is meeting with strenuous opposition, and rightly so, as we think, on the part of the gardening profession in this country, if due precautions and restrictions, such as are imposed upon the druggists, are observed in the case of the horticultural trader. Steps will be taken shortly to free the trade hitherto engaged in the sale of these poisons and poisonous compounds from unnecessary restrictions.

Her Majesty's Privy Council, as we learn from a report of a meeting of the Council of the Pharmaceutical Society of Great Britain, held on July 4, after many years of consideration, has at length decided to approve of carbolic

acid being placed in Part II. of the Poisons Schedule, a reservation being made that "any preparation of the acid prepared for use as a sheep-wash, or for any other purpose in connection with agriculture or horticulture, and contained in a close vessel distinctly marked with the word 'Poisonous,' the name and address of the seller, and a notice of the agricultural or horticultural purpose for which the preparation has been prepared."

The principal object of the authorities at Whitehall has been to give increased protection to the public in the ordinary purchase of small quantities, without at the same time injuring important commercial interests. In view of this decision of H.M. Privy Council in regard to carbolic acid, we think that the restrictions on the sale of nicotine, weed-killer, insecticides, and fly-papers, in the original packages, must, as a matter of justice and fairness, be removed, if all due precautions be henceforth adopted.

HARDY PALMS (see Supplementary Illustration).—A discussion has been going on in our columns as to whether the planting of Palms in the Riviera is not being overdone. Without expressing an opinion on this point, we may at least say that no such fears need be entertained in this country. Palms are so stately, so full of character, and so few of them are really hardy, that we may well cherish what we have. The hardiest of all is *Trachycarpus Fortunei*, the Chusan Palm, of which specimens stand out all the year at Kew, and which may be seen in the Isle of Wight, at Swanage, and many other places. Our present illustration shows the villa of Dr. RAMSAY, at Torquay, enshrouded with these handsome plants. We have before had occasion to mention the garden of this much esteemed "gardener."

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Royal Horticultural Society's Floral and Fruit Committees will be held on Tuesday, August 14, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. A lecture on "Melons" will be given by Mr. A. PETTIGREW, at 3 o'clock.

PRATIA ANGULATA.—It is questionable if any garden in the United Kingdom can show a finer specimen of this lovely creeping plant than the Edinburgh Botanic Garden. This plant is in a small bed in the botanical arrangement of plants, and attracts much attention by the freedom with which it grows and flowers. Roughly calculated, it must be from 10 to 12 feet in circumference, and it forms a nice mound in the centre with a broad margin which does not attain the same height. One can look upon a plant such as this with much enjoyment, because of the beauty of its little white flowers and the healthy appearance of the specimen. What surprises one is that it is grown in dry soil, and in an open position, conditions which would prevent it from growing in my own garden, where it will only thrive with a little moisture than generally obtains in the garden. It is found in the Edinburgh Botanic Garden that while it grows well in a moist place, it flowers with less freedom. I had an opportunity of seeing this for myself, and it considerably alters one's views to find that this is the case, even in a drier climate than we have in the south-west.

PEACH CULTURE.—We regret to find that in an article on this subject printed in our last issue, the writer has availed himself without acknowledgment of Mr. J. SIMPSON's book on the Extension system of cultivation. In some cases, Mr. SIMPSON's words are repeated word for word. The law of copyright is in so involved a condition (see the recent decision of the House of Lords) that we cannot pretend to say what is lawful and what unlawful. Common sense and common justice, however, rank deliberate plagiarism as decidedly dishonourable.

BOTANICAL MAGAZINE.—The following plants are illustrated in the current number:—

Cattleya × *Whitei*, Rehb. f., t. 7727. — A natural hybrid between *C. labiata* and *C. Schilleriana*, produced also artificially. The flower-segments are magenta-coloured, the two-lobed crenulate anterior portion of the lip is of a deeper colour, with reddish stripes and a yellow blotch at the throat.

Asparagus ternifolius, Hook. f., t. 7728. — Cladodes linear or linear-lanceolate, nearly an inch long; flowers numerous, pink, in lateral racemes of about 2 inches in length. A native of Natal. See *Gardeners' Chronicle*, 1872, p. 1588, fig. 338.

Phoradendron Molonellii, Stapf., t. 7729. — A Melastomaceous herb, with angular stems, stalked ovoid, oblong, acute, serrate leaves, and clusters of pink flowers. Dr. STAFF gives the distinguishing characteristics between this species and *Dicellandra*.

Huernia somalica, N. E. Brown. — A Stapelia-like plant, with pentagonal-grooved stems, sinuate, dentate along the edges of the grooves; flowers globose, spreading into a flat five-lobed purple-like limb. Native of Somaliland.

Senecio auriculatissimus, Britten, t. 7731. — This is a highly ornamental climbing shrub, with stalked, suborbicular, toothed leaves, whitish on the under surface; the leaf-stalk is dilated at the base into a large leafy convex auricle; flower-heads yellow, in loose, spreading panicles. Seeds were collected in British Central Africa by Mr. JOHN MAHON.

SPECIAL SOCIETIES.—We have a great many special societies connected with horticulture, but we have not as yet formed, as our American friends have, a "Society of Ornamental Horticulturists." Who would undertake to be a judge? And who could gauge the disgust of the disappointed exhibitor?

SWEET PEAS.—We are glad to find that the proposed classification of these popular flowers is to be based on colour rather than form. We know too well what the florists do when it is a question of form. A circular standard, flat as if ironed out with a flat-iron, would be a poor substitute for the undulating surface; and corresponding play of light and shade and variety of colour in the old fashioned Sweet Peas, nevertheless, improved substance of petals, increased number of flowers on a stalk are desirable. In order to satisfy the different tastes of different sections of flower-lovers, it would be desirable to have separate classes in the schedules for natural and for conventionalised flowers.

SOOT.—From a paragraph in our valued contemporary, the *Revue de l'Horticulture Belge* for August, we learn that a dressing of soot is fatal to the Phylloxera, and beneficial to the Vine. We have seen no Phylloxera now for some years in our vineries; but should it occur again, we shall hope to try the effect of the soot, as if efficacious, it would save much trouble and expense. The plan adopted is to dig in around each stock in winter-time 1½ litre of soot (say 2 pints). Our contemporary speaks of the root-form of the insect. Whether a dusting over the foliage with soot would be equally efficacious is not stated.

BULBS FOR THE WHOLE OF THE LONDON PARKS AND OPEN SPACES.—We understand that WM. CUTBUSH & SON of Highgate have been favoured with the orders from the First Commissioners of HER MAJESTY'S Works, Westminster, and the London County Council, for the supply of the whole of the bulbs required this autumn for the London parks and open spaces in the coming season.

EARTH-NUTS, PEA-NUTS (ARACHIS HYPOGEA).—From an American journal we have the information that the last crop of this edible nut was reckoned at between four and four-and-a-half million bushels. This is quite a favourite article of consumption in the United States, and would be more so here were heat applied to driving off the oily contents—as is the case, we believe, in the States. Mr. THEODORE WOOD, a member of the Executive Council of New Guinea, says that Pea-

nuts are likely to prove a great success in that part of the world, certain portions of the "Possession" being eminently adapted for their cultivation. Samples sent to Brisbane would appear to be quite equal to the best of anywhere else. As far as can be judged at present, the class of land in British New Guinea upon which the Pea-nut will thrive should yield at least four tons to the acre, and in favourable seasons the planter may be expected to take two crops per annum. The cost of cultivation is very small, the labourer being easily satisfied with a very trifling remuneration.

THE NEW YORK BOTANICAL GARDEN.—The completed conservatories will, says *American Gardening*, cover about one acre. The total length is about 525 feet. The central portion being 100 ft. in diameter and 87 ft. in height. The two curvilinear wings are each about 120 ft. long by 36 ft. wide, and the corner houses are 85 ft. square without the vestibules. The heating is effected by steam pipes placed in a subway 6 ft. high, connecting the conservatories with the power-house 600 ft. distant.

SEEDLESS ORANGES IN CALIFORNIA.—An American lady travelling in Bahia some thirty years since "happened" upon some fruits of this now world-renowned variety, and got some trees home. Two of these found their way to the Riverside estate in California, the proprietor of which is Mr. H. TIBBETTS. They were then carrying some sixteen fruits—the average annual shipment from this place has now reached 1,600,000 boxes.

COMMERCIAL CULTIVATION OF PLANTS UNDER GLASS.—It is estimated that the retail value of cut flowers sold in the States annually is \$12,500,000, the estimated apportionment of this sum being for—

Roses...	...	...	...	...	\$6,000,000
Carnations	...	...	...	...	4,000,000
Violets	...	...	...	...	750,000
Chrysanthemums	...	...	...	...	500,000
Miscellaneous flowers, including Lilies, &c.	...	...	...	...	1,250,000

Estimating the average retail value of Roses, Carnations, and Violets at \$6, \$4 and \$1 per hundred, respectively, the total number of each sold annually based on the above values, would be, of—

Roses...	...	...	...	...	100,000,000
Carnations	...	...	...	...	100,000,000
Violets	...	...	...	...	75,000,000

275,000,000

The retail value of the plants sold is placed at \$10,000,000. Taking the plant trade as a whole, and the country in the aggregate, the average-sized pot used is estimated to be 3 inches, and the average retail price 10 cents per pot. This means that there are no less than 100,000,000 plants sold every year. To handle this business in its entirety requires probably an average of not less than one man for every 1,500 square feet of glass, or 15,000 men in all. Fifteen hundred square feet of glass per man may seem like a low estimate, and such is the fact when considering commercial establishments of any size. The larger the area of glass, other things being equal, the more square feet one man can handle. As a matter of fact, some of the large Rose-growing establishments do not use more than one man for each 10,000 square feet. Large Carnation establishments will run about the same as Roses; while Violets, owing to the great amount of work involved in cleaning the plants and picking the flowers, average higher. It is the many thousand small establishments that increase the amount of labour required. *American Gardening*.

THE GALE AND THE FRUIT CROPS.—The severe gales that we have lately experienced will, we fear, very materially alter the conclusions at which we arrived from information from all the counties in Britain and Ireland. Already we hear of great losses. In the circumstances, we do not think it desirable to print the many comments on the state of the crops, previous to the storm, with which our correspondents have obligingly favoured us.

THE TIMES AND COPYRIGHT.—We see that the *Times* of August 7, says that "Mr. LANE

would have obtained permission [to reprint a report published in the *Times*], had he asked for it." On one occasion we had to ask permission to copy the substance of a report of a law case of great interest to our readers. The reply was a curt refusal, and but for the fact that the Judge's notes were courteously placed at our disposal, we could not have given an adequate report of the case.

LATE DELIVERY OF THE "CHRONICLE."—We have again to apologise to many subscribers who did not get their copies in due time last week. They were no worse off than the Editor, who is supposed to get the first copy pulled on Friday morning by the first post, but who did not receive it till Saturday afternoon. Enquiries at the Post-office elicit the fact that their arrangements are not yet perfect.

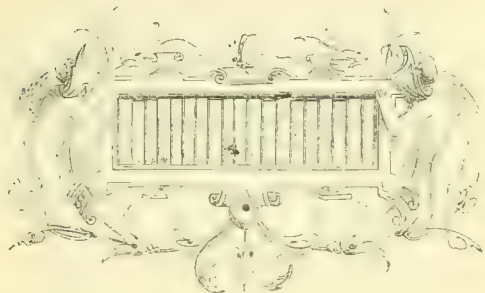
ALLOTMENT GARDENING AT HORNSEY.—Bank Holiday was celebrated in Hornsey by the fifth annual exhibition of flowers, fruit, and vegetables in connection with the Hornsey Horticultural and Allotments Association. Mr. H. C. STEPHENS, M.P. for the Hornsey Division, in opening the exhibition, congratulated the exhibitors upon the excellence of the display which they had made, and the Association upon the progress it continued to make. Most people would allow that men who were good gardeners were generally also good men, fond of their families, steady, and quiet; and therefore it was obvious that the provision of allotments in districts like Hornsey was a wise provision. He was sorry to hear that some of them were about to lose their allotments, and this was bound to happen when the allotments were only held on lease. He advised them to urge on their district council to acquire a freehold site for allotment purposes. They could do this now, but before long, with building operations going on all around, it would be an impossibility. The council had interested itself in technical education, and he thought it might well regard gardening as a branch of that education, for agriculture was the most important industry in the country, and yet less was known about it than about any other subject.

THE ARCHBISHOP'S PARK.—The Lambeth Road entrance to the Archbishop's Park was opened a few days since to the public. This will confer a great boon upon the people living in the thoroughfare. Hitherto they have been obliged to make a long détour round towards Westminster Bridge Road in order to get access to the park.

ANNUAL EXCURSION OF MESSRS. WM. FELL & CO.'S EMPLOYÉS.—On the 2nd inst. the employés of Messrs. WM. FELL & Co., Royal Seedsmen and Nurserymen, Hexham, to the number of nearly eighty, made their annual excursion. Scarborough was this year the selected place, the party spending a most enjoyable day.

THE RAILWAY COMPANIES AND THE COMING NATIONAL CO-OPERATIVE FESTIVAL.—When a man sees a work into which he has put his heart, in danger of being crippled and spoiled, it is hard to be patient. That is my own position to-day. Over a dozen years ago I saw the opportunity of establishing annual National Co-operative Festivals of music and flowers on a grand scale, something which would excite enthusiasm, and set men and women to work to help in every corner of our land to develop higher tastes amongst our people. I need not say how great has been the success. It is sufficient to mention, that whereas in the first year we could only find 1,500 co-operative singers, we have now grown until we could, to-day, easily find 15,000 if we could make room for them. And the "One and All" flower show entries have grown from two or three hundred to five thousand per year. The development of this work has been aided in the past by the generous policy of the managers of the great railway companies, who were willing, when I first met them at the Railway Clearing House Meetings a dozen years ago, to look at such questions in the broadest light. This

generous policy is now being reversed, the privileges to our singers are being suddenly withdrawn, excursion fares are raised all round, and Saturday excursions are curtailed. Since the new resolution of the railways was taken, there have been three or four popular musical festivals other than our own at the Crystal Palace. The first was the Nonconformist Festival. This has usually had a full choir of 5,000 or 6,000 singers. This year the Handel Orchestra presented a melancholy spectacle of half-empty seats. I had a photograph taken, which I send you, side by side with one of our own choir of last year, when all seats were full. You will see what a beggarly array of empty seats now presents itself; the shrinkage in the audience is also noticeable. Then came the Temperance Fête, and that of the Tonic Sol-fa Association. The heads of these most excellent movements announce publicly that they have this year practically lost all their adult singers. Is it too late to make an earnest appeal to public opinion to press on the railway managers the re-consideration of their recent decision? There must be many amongst them who still retain the traditions of statesman-like policy of recent years—a policy which has been good alike for the companies and for the travelling public.—EDWD. OWEN GREENING.



BOOK NOTICE.

SCOTTISH GARDENS. By R. S. Lorimer. From the *Architectural Review*, November, 1899.

THE praise of gardens we read (p. 5) is as old as history, but we may be pardoned by supposing that no generations enjoyed their gardens quite as keenly as we do ours; for to-day, owing to the very eager life of most people, we get in the repose and seclusion of the garden the delight of a strong contrast. Your modern man of affairs can one evening eat his dinner in a corridor-train, the next morning he can spend ruminating in a garden that has been the same for centuries; the same, and yet always changing, ever coming, and ever bidding adieu; one week, one corner a perfect cascade of colour and beauty; the next week gone, and a king's ransom could not bring it back. But still one feels the best is yet to be, and presently some other corner takes up the wondrous tale.

The lover of the garden is inevitably and eventually exclusive. He must be so, or the charm of his domain is gone. It may be a stately pleasure, walled in by clipped Yew and gay terraces, but it must be his alone—his to wander in, to cherish, to dream through undescribed.

The garden is a little pleasure of the soul, by whose wicket the world can be shut out from us. In the garden something of the golden age still lingers in the warm alleys where the bees hum above the Limes, and the Stocks in the blue shadows; where the azure butterflies look dark in the amber haze, where the Lime-leaves and the Acacia flowers wave joyously as the west wind passes.

The true lover of a garden counts time and seasons by the flowers. This Calendar is the Shepherd's Calendar. We well remember all the events of his years by the trees or plants which were in bloom when they happened. The Acacias were in flower when we heard, or the Hawthorns were all out when we saw. He will say to him-

self, if not to others, as Ouida so charmingly puts it in *A Chat about Gardens*, "There's nothing like a garden for cultivating the kindly social virtues. Its perfectness puts people on their good behaviour; its nice refinement secures the mood for politeness. Its highland beauty produces the disposition that delights in what is beautiful in form and colour. Its queenly graciousness of mien inspires the reluctant loyalty of even the stoniest mind. Here, if anywhere will the human hedgehog unroll himself, and deign to be companionable. If a designer of his work is to have any freshness, he should live, move, and have his being in a garden, remembering the eager Sedding's aphorism, that 'a house in a garden, a stroll in the embroidered meadows, is better than a month of sixpenny days in a stuffy museum.'"

Mr. Lorimer says, of gardening in Scotland of the olden times that there is little to tell. We credit Queen Mary with planting her Sycamore-tree at Craigmillar Park, and introducing French Sorrel and Angelica near where the latter is still grown for the Edinburgh confectioners. Of Mary's garden at Loch Leven, not a vestige remains. Traces however of the Queen's garden, when a child, may be traced in the Island of Inchmahome, in the Lake of Monteith. You wander through the ruins over-grown with Fern and Spanish filberts, and old fruit-trees; and at the corner of the old Monkish Garden you come upon one of the strangest and most touching things you ever saw—an oval space of about 18 feet by 12, with the remains of a double row of Box all round about 14 feet high, 8 or 9 inches in diameter, healthy, but of great age—evidently the Queen's baby-garden left to itself for 300 years. As is well known, Mary was placed by her mother in the Isle of Rest, where she paced with her four Marys, her child maids of honour, when she was about five years old, before sailing from the Clyde to France. There is something that thrills the heart-strings as to the life, in standing, and looking on that living relic of that strange pathetic old time.

This author, who of course writes more as an architect than a garden artist, yet holds a fairly even balance between the two as the few following sentences will show. "Close to the mansion the architect naturally displayed his own art in statues, vases, terraces, flights of steps, balustrades. The gardener forced the vegetable to correspond by cutting his evergreens into verdant walls with towers and battlements, and his single trees into statuary."

The fact that any of these old Scotch gardens remain is more due to luck than good grinding. Some of the Lairds were too poor, others too indifferent to the terraces round the house, surrounded it with coarse gravel ankle deep, leading to sloping banks, dotted with that arch abomination the specimen tree, or groups of monkey puzzles as at Hatton House, Midlothian. Traquair, Balcaskre, are briefly noticed, and then it is said: "Nothing more splendid could be imagined, the straight Beech avenue at such places as Donibristle and Fordel. Curve the approach by all means, if the ground suggests it, but when going through a level piece of park, avoid the meaningless sweep that is intended to be what the landscape-gardener calls 'eye sweet.' We all know the type of avenue, and the country house, it leads to that tier a hundred yards from the road, but whose laird would fain have you imagine that he has a park of a thousand acres, so he curves his approach in endless winding round every hump and hillock, and Rhododendron bush, until you finally arrive at the doors gasping and exasperated. Mr. Lorimer has only less than a line on the biggest flower-garden in Scotland, Drummond Castle, and names it in contrast with one of the smallest over the Tay at Stobball. He also writes of Drumlanrig as immensely fine of its kind, but no longer seeming to sing in time with its own countryside.

Of the Renaissance, he says "that its lesson was learnt all too well. The craftsman who, using his local materials in his right, rough, fanciful way, and with his few half French traditions, gave us

such miracles of beauty as some of our old Scotch houses had to curl up; while the man with the books and the cut-and-dried rules came along and gave us a piece of full-fledged grandiosity like Drumlanrig."

The author quotes Edzell and Earleshall as typical examples of Scotch houses and gardens before the Renaissance had much influence, and gives a charming illustration of Edzell:—

"Here is a piece of ground as flat as a kitchen-table, but with such a garden-wall. The garden-wall of stone, that shut the flowers and trees up with the sky, and trebled all the beauty, divided into bays by pilasters, of which only the caps, bases, and bands remain between part of the wall, with the frieze-cheque of the Crawfords, the recesses scooped out into little pockets for flowers. . . . For each alternate bay, a recess for a beeskep, above a carved panel. On one side various deities of classic story—Apollo, Diana, Mercury; on another the virtues and sciences—'Charitas,' of many children; Dialectica Arithmetica, busy over a sum; Geometrica, absorbed with the compasses. In the corner a charming summer-house, vaulted below and above, a room that had once a painted ceiling."

In contrast to this venerable wall at Edzell, steeped in old-world memories, let us hear what Mr. Lorimer has to say on one more other garden:—

"Barncluith is quite unlike anything else. Scott has described it in his famous essay on 'Frost-trees': a detailed description can convey but little idea of its charm. It is the most romantic little garden in Scotland. Lying on one side of a great wooded valley, it is a veritable hanging garden. Four or five terraces one above the other sticking on to the side of a cliff, the general angle of which is about 55°. Two little summer-houses, great trees of scented Box, and the flowers gathered here you feel sure would be, not a bouquet, but a posy—such an atmosphere about the place. In the twilight, or the moonlight, destinies might be determined in this garden."

Were architects generally inspired with such lofty ideals as these as to the legitimate place and power of the garden in the every-day economy of our social and intellectual life, there would be less danger of our gardens being tucked into an out-of-the-way corner half a mile or more from the house. The most devoted lover of Nature and Art in the garden can hardly complain of the place he assigns near the end of his paper:—

"The house and home should be dignified, but livable, spacious, lofty rooms, with chaste ceilings; the chief windows ever looking out over the gardens in tune with the house; a garden that has quite a different charm from the park; a garden that is an intentional, deliberate piece of careful design; a place that is guarded and matured with the tenderest care, but that becomes less trim as it gets further from the house, and then naturally and gradually marries with the demesne beyond."

Seldom have landscape artists and gardeners listened to a more cheerful sermon of conciliation and peace from a distinguished architect. D. T. Fish, F.R.H.S.

THE ONE - AND - ALL FLOWER SHOW AT THE CRYSTAL PALACE, (AUGUST 17 AND 18, 1900.)

THIS year of plenty on the farm and in the garden promises to produce the best shows. This, the fifteenth in succession, is to be opened at 3 P.M. on Friday, by the Countess of Warwick, who has done so much for the education of women in horticulture.

In the August number of the *Agricultural Economist*, E. O. Greening, Esq., the founder and projector of these great shows, gives on p. 251, in two or three sentences, the rise and progress of these noble efforts to use the best music and most perfect fruit and flowers as the most effective means of sweetening the daily lives, and ennobling the pleasures of the masses.

"Another very inspiring feature to hard-working men, covering long distances, who may not yet have become perfect gardeners, is the breaking through the almost stereotyped three-prize throughout the schedule, making a fourth almost as constant as the third, and adding frequently a fifth and a sixth in the more popular classes."

The table decorations (p. 39) on the Saturday, August 18, and the other items I name from the same show and date, must indeed prove—I might truly say, have proved—a powerful means of culture, and the best possible school of art for the toiling million.

Then the special classes (p. 45) for ladies and

fruits, the most perfect bunch of Grapes, the Muscat of Alexandria, has ten points, the other ranging from nine to five, I suppose it would be little use to growers, that only ten points each can be awarded to those three features of the table that add greatly to its grace and beauty. Table plants, cut flowers and foliage, and tasteful arrangement: Surely the latter if deserved should have been allowed to reach to fifteen or twenty points. But the prizes for this educational collection are surely on a par with its high aims and conditions. "Mrs. Henslow," an original water-colour drawing, value ten guineas: 2nd prize, four guineas: 3rd prize two guineas. A consolation prize of a guinea is

and apparently bewildering them. I am sure no Society would be more ready to acknowledge their deep indebtedness to these for their past success. Directors seemed recently to have changed their mind about excursions and cheap fares. For years most of them know that it is the third-class fares that keep the "firsts" running, and that generally the cheapest fares pay best in the railway world. But latterly not a few seem to think that popular tripping involves a loss. Like the landlady who declared she lost a halfpenny on every pint she sold, when asked how she lived, replied, she sold a good many; so certain directors seem to think they can keep up their dividends and pay their extra coal-bill from weighing luggage and abolishing cheap fares to popular and charitable or other societies.

Not a few commercials are already mooting to go back to their old horse-traps or new motor-cars on the road; and quite half, at the least, of those who go to great fêtes and festivals, such as the One-and-All, are free to stay at home if they like, so that the abolition of liberal terms for such fêtes will neither prove profitable to the railways nor render the most useful nor patriotic service to the company. Surely the railways cannot venture to cripple or hinder the great work in hand by such societies as One-and-All, and other charitable, scientific, educational, and other gatherings. Were our Hon. Secretary and Mr. Waugh to go, Agricultural Economist in hand, and bring the illustration from crowds from floor to roof in sharp contrast with the beggarly array of semi-empty benches under the new railway rates, surely it might retain the old ones for our exhibition and the half excursions for the singers in time to save the most ennobling and delightful of all the people's fêtes, educational and other social gatherings of the year from injury and curtailment.

CALATHEA CROCATA.

THE accompanying illustration (fig. 29) was prepared from a plant shown at the Drill Hall last spring; it attracted attention by the bright yellow colour (crocata = saffron-yellow) of the leafy bracts surrounding the flowers. Like all true Calatheas, its leaves spring in a tuft direct from the rootstock, as in the common Primrose, and the flowers are aggregated in a spicate head, on which the bracts are usually most conspicuous, both as regards size and colour. The leaves are dark green above, purplish below, undulated, the blade being 6 to 8 inches long; the scape is 6 inches high. The plant was first introduced from Brazil in 1874 by Messrs. Jacob Makoy & Co., Liège, and flowered freely with them in February, when a figure of it was published in the *Belgique Horticole*, vol. xxv. This figure was reproduced in the *Floral World* in 1876.

Much confusion prevails in gardens between the two genera, *Maranta* and *Calathea*. Many of the plants known as *Marantas*, such as *illustris*, *prasinia*, *princeps*, *Sanderiana*, and *smaragdina*, are true *Calatheas*, with tufted leaves and a capitate inflorescence, similar to that figured. On the other hand, the plants known in gardens as *Calathea Kerchoveana*, *Makoyana*, *Massangeana*, and *Devosiana*, are true *Marantas*, and merely varieties of *M. bicolor*, a Brazilian species, showing considerable variation in leaf-variegation. The *Marantas* have zig-zag stems, and a loose, branching inflorescence, bearing few small flowers. W. W.

PLANT PORTRAITS.

ERIGERON SP. ROSUS.—A tall, herbaceous perennial, with lanceolate, sessile leaves, tapering at both ends; and loose panicles of flower-heads, in which the rays are violet; the disc yellow. *Michaux's Monthly*, August.

PHALANOPSIS LUDDEMANNIANA.—Segments with pink, transverse bars on a yellow ground; front lobe of lip pink. *Revue de l'Horticulture Belge*, August.

THELIDIA MARANTHA.—A warm greenhouse plant, with purple stems, sessile, ovate, acute leaves, and terminal heads of flowers; corollas cylindrical, distended in the centre, deep red, except near the shallow, five-parted, cream-coloured limb. *Revue de l'Horticulture Belge*, August.



FIG. 29.—*CALATHEA CROCATA*.

children. The six subjects are admirably chosen, and the prizes queenly. Then the best table of cut flowers, 12 feet by 4 feet, is most useful; but I fear the table about 7 feet square arranged, for which the liberal prizes of £3, £2, and £1 are offered on p. 45, may come out rather heavy, as square tables are seldom graceful or effective. The table on p. 41, 8 feet long by 4½ feet, is far easier moulded into good taste and form.

EDUCATIONAL CLASS AND COLLECTION OF GARDEN PRODUCE.

This is to consist of seven dishes of fruit and seven of vegetables, to be judged by points in the usual way. As only one fruit, the queen of all

promised to every exhibitor in the class whose collection possesses sufficient merit. Then there is an excellent class in which first, second, and third class certificates are for exceptional fine fruit, flowers, and vegetables.

The certificates carry the following cash value: first class, £1; second class, 10s.; third class, 5s. Several societies also give liberal prizes as usual; and all the sports, children's fête, march past, cricket match, musical drill, juvenile and adult competitors, and a great popular concert of 5,000 voices alone. Brock's fireworks promise to be brighter, better than ever. But for the last few months a cloud little bigger than a man's hand has been over-running some of our railway companies,

LATHYRUS MAGELLANICUS AND L. PUBESCENS.

THE history of *Lathyrus magellanicus* (Lamarck) dates from the celebrated voyage round the world of Lord Anson with the ship *Centurion*, and others, A.D. 1740–1744. The *Centurion*, with the crew in a dreadful condition from scurvy, reached the south-eastern point of South America in the beginning of March, 1741 (equivalent in season to our September). The weather was then mild and bright, and it seems to have been at the entrance of Strait Le Maire that this Pea was first found. It is mentioned in the seventh edition of *Miller's Dictionary*, published soon after its discovery; but I have only the ninth edition, by Martyn, published about 1804, who says of it: "Mr. Miller has a perennial Pea, which he calls *Pisum americanum*, or the Cape Horn Pea, from its having been brought by Lord Anson's cook when he passed that cape, where this Pea was a great relief to the sailors; but it is not so good for eating as the worst sort cultivated in England." Then follows the botanical description.

But the plant is best known to gardeners from a beautiful portrait in Sweet's *British Flower Garden*, Series II., tab. 344, under Lamarck's name, *L. magellanicus*. Sweet tells us that it was given to Miller by the cook of the *Centurion* on his return to England, and cultivated in the botanical garden of Chelsea, of which Miller was gardener, but that it was soon lost. We do not hear of it again in cultivation until Sweet's time, whose portrait, published in 1833, was taken from a living plant in the nurseries of Messrs. Osborn, at Fulham, flowering in June. After this, it was again lost sight of; but the brilliant blue colour and fine habit of the plant, as represented by Sweet, made it a desideratum to gardeners, until recently reintroduced by a very enterprising amateur (Mr. A. Bulley), in whose garden in the Wirral of Cheshire I saw it flowering in July, 1899. Sweet's is a faithful likeness except in colour, which in real life is dull purple.

Seven seeds were given to me by Mr. Bulley in September, 1899, all of which came up at once. Two seedlings I gave away; the other five, when a foot high, I planted out in various soils and aspects; two flowered sparingly in June when a yard high, the others look more or less sickly, and though all send up a succession of blind shoots from the base, they show no sign of more flowers. I have tried some of the shoots as cuttings without success. Mr. Bulley tells me that his plants have not proved perennial, making no reappearance after winter, and that he is so much disappointed with the colour that he shall take no more trouble about the species. It certainly seems hardly worth much trouble, but Sweet makes a reasonable suggestion: that being a maritime plant, native of a very stormy coast, it may require sprinklings of salt to keep it in health. We know many British plants which require this.

Another rather similar Pea of recent introduction to British gardens is *L. pubescens* (Hooker), native of Chili. This was illustrated two years ago in the *Garden*, having been grown out-of-doors by Mr. S. Arnott, near Dumfries. Mr. Arnott kindly gave me six seeds, all of which grew, as well as a cutting attached to a specimen flower which he sent me. The cutting flowered sparingly in June, 1899, but none of the seedlings flowered, though they continued to grow to 5 feet high, and threw out many slender branches till the end of summer, none of which had completed their growth when winter killed them all; but cuttings taken in autumn flowered sparingly in June of this year, planted out against a south wall. The flowers are about half the size of those of *L. magellanicus*, which I omitted to say about match in size the common everlasting Pea. The colour is far more like blue than that of the Cape Horn Pea. *L. pubescens* may prove hardy in the mildest parts of our islands, but as it comes from the neighbourhood of Valparaiso, it is hardly likely to succeed as an outdoor perennial in ordinary gardens. C. Wolley Dod, Edge Hall, Malpas.



HOME CORRESPONDENCE.

MELONS.—The various Melons exhibited at the last Drill Hall meeting were very indifferent. It speaks volumes for the quality or otherwise when Melon-flesh is eaten with gusto, or is immediately expelled from the mouth. No one seeing how tempting in appearance Melons look when ripe and well-netted, would imagine that such handsome fruits could be even less pleasing to eat than a common Marrow. Sometimes they are positively nauseous. The best-flavoured Melon at the recent meeting, and it was but sweetish flesh, had a very common fault, in having one-third of the outer flesh quite hard, whilst the inner flesh was soft. That is a common defect when white or green-flesh Melons are crossed with scarlet-flesh varieties. It seems as if the flesh was of diverse quality from that of the middle of the fruit. The huge Melon, weighing 13 lb., submitted to the committee, had no such defect, the flesh being very solid and smooth, but it was entirely devoid of taste. I have been credited with prejudice against Melons. That is not true. I dislike bad Melons very much, and it not infrequently happens that some placed before the committee are positively nauseous. Why it should be so is difficult to understand; as also is it to understand why, with so many really superior Melons in commerce, anyone should labour to spoil them, as they so frequently do. There are many Melons that, with judicious culture, will hardly be other than good; hence, it would seem as if it were less varieties than culture that was the cause of so many of the newer ones proving to be so bad. Really a first-rate, well-flavoured Melon is hailed with great satisfaction at the Drill Hall; and all the more readily, because, like angels' visits, they are found so seldom. A. D.

SEEDING OF THE BIRCH.—In regard to the query put by your correspondent in *Gardeners' Chronicle*, p. 74, I may state that the heavy crop of seed on the Birch has had a marked effect on the foliage of many specimens that I have noticed in this district, East Gloucestershire, the leaves being very small on the branches that are so profusely laden with catkins; the same effect is quite as evident in the Beech, the crop of mast being remarkable, and the foliage much smaller than usual. J. P., August 7.

THE STORM.—Although we may expect one gale on an average each August, it is rarely so violent as the one we experienced on the 3rd inst. Deciduous trees, unaccustomed to be caught in full foliage by such a great storm, have suffered more than evergreens. Poplars have, in many cases, been torn up by the roots, or snapped in two. Among the "orchard" trees, Apples have, in many cases, been stripped absolutely bare of fruit, and I think 90 per cent. of the crop on an average is lost. Pears have lost over half the crop, and even Plums and Nuts have suffered severely. If such is the record in an enclosed garden, it is to be feared that there has been a complete loss of the crop on the "orchard" trees in more exposed situations. "Pruned" trees of all kinds have not lost more than 10 per cent. of their crop, which they could well afford to do, as they were well laden; but we have yet to learn the quantity of bruised and damaged fruit. In any case, serious losses have fallen upon those who grow for market, and many Dahlia-growers are in despair. A. Worsley, Isleworth.

THE RECENT RAINFALL IN THE COUNTY OF DURHAM.—I am sending you a record of the amount of rainfall measured here for the twenty-four hours ending Saturday, 4th inst., 9 A.M., thinking it may be of some interest to readers of the *Gardeners' Chronicle*, and also be the means of bringing to notice the rainfall in other parts of the country. So large a quantity in twenty-four hours is to me, quite unprecedented in this district, viz.,

3.85 inches between 9 A.M. and 5 P.M. on Friday. When the storm was at its worst, the rain-gauge showed exactly 2½ inches. I need hardly say that seeing the rain was accompanied by a N.E. gale of wind, and continued for twenty hours, the amount of damage done is almost indescribable. Nearly everything in the garden has suffered terribly, and the corn crops in this district are levelled to the ground. H. E. Gribble, Aynyard Park Gardens, Stockton-on-Tees.

SEVERE DAMAGE TO FRUIT CROPS IN MONMOUTHSHIRE.—The abundant crops of Apples, Pears, and Plums shown in the reports published in the *Gardeners' Chronicle* last week have been severely thinned in this district at least. On Friday, August 3, and again on Monday, storms of wind and rain have not only shaken an immense amount of fruit from the trees, but have also broken away large branches of the trees themselves. In a few instances trees have been uprooted. Apple, Walnut, Damson, and Plum-trees have fared worst. The wind has been more violent than old inhabitants declare is common in this district in winter. There are sacks of Apples strewn over even the smaller orchards. At a local flower-show which was held on Monday last, the tents were blown away, and the exhibits destroyed. R. H. P., Post-office, Llangatlock, Lingoed, Abergavenny.

THE GALE AND THE FRUIT CROPS.—The gale on Friday, August 3, was the most disastrous experienced in this district during the past six years. Heavy rain preceded and accompanied the storm, and the trees having an abundant foliage, they felt the full force of the wind. Stakes were snapped like twigs, and strong pyramid Pears, 10 to 12 feet high, were in several cases broken off close to the ground; while dwarf Apples were nearly torn up by the roots, and branches were stripped off standard Apples. Though much of the fruit was blown off or damaged, Plums suffered less than other fruit-trees, except on the outside of plantations directly exposed to the wind. The Apple-crop has been effectively thinned in this neighbourhood, and except in the case of the earliest varieties, the fruit was not advanced enough to possess any saleable value. The repetition of the gale on Monday was not nearly so serious in its results, as there was less rain; and wherever possible its effects had been minimised by additional staking; in fact, in one exposed plantation of young trees prompt attention on Friday practically saved it from destruction. R. L. Castle, Ridgmont, Beds.

THE WEATHER IN NORTH CORNWALL.—During the past month we have had a goodly proportion of seasonable weather. On three days the thermometer registered over 80° Fah. in the shade, the maximum being 88° on Thursday the 19th, which day was extremely sultry; the minimum temperature for the month was 39° on July 8. The weather generally has been decidedly hot; on July 11 it was very oppressive, and followed by a thunder-storm during the early hours of the 12th, which brought some welcome rain, and cooled the air to an appreciable extent. During the hottest weather the barometer was high, but never very high; the highest reading for the month was 30.35 inches at 1 P.M. on Monday, July 2, and the lowest 29.46 ins. at 8 A.M. on the 9th. The rainfall has been slight, the total being 1.30 inches; the greatest fall during twenty-four hours was 0.35 inches, measured at 9 A.M. on Sunday, July 29, and there were seventeen rainless days. A. C. Bartlett, Pencarrow Gardens.

THE WEATHER IN ENGLAND, SCOTLAND, AND IRELAND.—There has been too much wind and rain all over these islands in the middle of harvest. On Monday, August 6, in many places, the down-pour exceeded an inch. Parsonstown (King's County), 1.6 in.; Leith, 1.3 in.; Donaghadee, 1.2 in.; Holyhead, 1.0 in. At Parsonstown the fall for the twenty-four hours was 43 per cent., and at Leith 45 per cent. for the whole month. In Edinburgh we have several times had an inch of rain lately. Notes of rainfalls since 1854 only give three instances of greater rainfalls. Sept. 23, 1861, 2.10 inches; Oct. 20, 1864, 2.43 inches; July 13, 1879, 2.95 inches. In the period under review, the greatest August rainfall hitherto recorded was 1.94 inch on August 21, 1897, and again on August 12, 1898. The last rainfall for twenty-four hours here, equals 202 tons or 45,000 gallons per acre. This amounts, over the 8,804

acres within the area of the city, to 1,778,000 tons, or 396,000,000 gallons of water. Glasgow seems to have got off with less rain this time. The latest news giving the data up to ten o'clock yesterday morning, giving the rainfall for the last twenty-four hours 1.46 inch, the heaviest that has fallen for a long time, even more so than the notable one of November last. *D. T. F., Aug. 8.*

FLORISTS' FLOWERS.

CARNATION MRS. T. W. LAWSON.

I HAD recently an opportunity of observing a plant in bloom of this celebrated Carnation, and if I said that it is an acquisition, I should be doing it but scant justice. The variety seems to possess a good constitution, is free in growth, and has a promising habit. It is floriferous, and produces blooms of a large size, true pink in colour, deliciously perfumed, and furnished with stiff stems.

Top dressing encourages surface-rooting, and thus enables the plant to take up much more nutriment than would be the case were no top-dressings given. All suckers, moss, and weeds should be removed, the surface loosened, and the roots laid bare, before the new soil, &c., are added. Close to the stem, and in the centre of each pot, lay a crock, 2 inches square, or an oyster-shell, the concave side upwards, and on this let the water fall when applying any to the plant. If the surface of the soil could be entirely covered with crocks, surface roots would be all the more quickly effected.

Earwigs, the jumper, and thrips, are troublesome insects, if their destruction be neglected. The first must be constantly trapped and destroyed, and for this purpose nothing is better than pieces of Bamboo or dry Broad-bean haulm-stems, about a foot long, thrust among the leaves, but these must be emptied daily, and the insects destroyed.

The "jumper" is a small insect that punctures

over the orifice, so as to direct the liquid upwards or downwards as may be required. Vermorel's Knapsack Sprayer is an excellent instrument for applying the mixture. If a slight discoloration of the leaves follows, this is easily got rid of in a few days by vigorously syringing with clean water. *E. Molyneux.*

EUCHARIS GRANDIFLORA.

ALTHOUGH a native of the New World, *Eucharis grandiflora* succeeds admirably in India when given the right site and suitable cultivation. Our illustration (fig. 30) shows a group in full bloom in the garden of Mr. N. Subramanyam, Administrator-General of Madras. Mr. N. Subramanyam owns at Luz, Mylapore, Madras, a large garden, and in the compound he is growing these Amazon Lily plants under a large Rain-tree (*Pithecolobium saman*), throwing out a shade of about 260 square feet in circumference. This experiment under the shade of a Rain-tree has given these plants a most luxurious growth, and such experiments require honourable mention. Mr. Subramanyam is an enthusiastic amateur in gardening, and takes a good deal of interest in horticulture. Every year, about the middle of January, many gentlemen go there to admire the beautiful scenery of the snowy-white star-like Amazon Lily flowers. The plants flower more or less throughout the year, but in profusion in January only. Many of your readers may not know the peculiar character of this Rain-tree: it affords ample shade in the day-time, and towards evening the leaves close and allow the plants growing underneath it the benefit from any rain, but more especially the dew, which at times of the year is very heavy. The leaves are also more or less closed on dull days, so that the plants do not suffer from insufficient light. *B. F. Cavanagh, Superintendent, Agri-Horticultural Society, Teynampet, Madras.*



FIG. 30.—EUCHARIS GRANDIFLORA GROWING OUT-OF-DOORS.

SELECT SWEET PEAS.

It is generally admitted that the number of varieties of Sweet Peas is much in excess of any one's requirements. It is also an almost universal complaint that many varieties bear a too close resemblance to others to be regarded as either distinct or necessary. With the sole view of assisting those persons who have not the opportunity of judging for themselves, I will endeavour to select a moderate number of desirable varieties.

I have previously written in the gardening press concerning the value of Sweet Peas in the garden, and advocated their being planted in greater quantity, and in separate colours, as being the best mode of displaying their beauties. It is generally admitted that there are at the present time something over 200 varieties in cultivation. This number is, of course, much too extensive for any garden, and it has been said that no difficulty would be experienced in reducing this number to thirty! This I do not agree with, as there are far too many distinct and deserving varieties to confine a representative collection to that limited number.

I have endeavoured to place the varieties somewhat in their order of merit, and have grouped them in their respective colours, following the example set by Mr. H. Eckford in his catalogue as nearly as is practicable, in my estimation. Commencing with the section that is, in my opinion, the most valuable of all—white, I unhesitatingly place at the top of the list Emily Henderson. With the exception, perhaps, of Queen of England, this is the oldest variety of that colour; it is a variety raised in the U.S.A. The flower is pure white, large, with erect standards, and having stout stems, and frequently having as many as four blooms on a stem. Sadie Burpee is the best of the hooded section, being of pure white; as a rule though, this type of bloom, with the incurving standards, does not appeal to the public taste so much as those with erect standards.

The plants were raised from cuttings struck in March. Mrs. T. W. Lawson is likely to justify all that has been said about it on the other side of the Atlantic. *C. Straughen, Ynys-y-Maengwyn, Towy, Denbighshire.*

CHRYSANTHEMUMS.

There are a variety of matters which the gardener should pay attention to at the present date; and one is the top-dressing of the potted plants with loam $\frac{2}{3}$, and cow or horse-manure $\frac{1}{3}$, either within the rims of the pots if the depth admits of this being done, or within the compass of hoops of zinc, or a wall of turf, &c., put round inside the rims. This top-dressing will suffice if it be $\frac{1}{2}$ an inch thick when pressed down on the ball. Thomson's Vine-manure and bone-meal in quite small quantities are useful in the top-dressings, failing other materials. The plants should stand free from the shade of trees or walls, as these prevent the ripening of the shoots.

Plants which possess shoots of a soft, sappy nature cannot produce blooms of great depth, with great substance in the petal, rich in their tints, and of that solidity which is so much admired in the "Mum;" but the blooms will be of great diameter, and of a flabby appearance, and thin of petal.

the flower-stem immediately below the bud, causing it to turn over to one side, and utterly spoiling the blooms. The best means of averting mischief is to render the rind of the stem distasteful by syringing it with quassia-water and soft-soap, or a weak mixture of petroleum and soap-suds. Thrips are insidious pests, injuring the tender leaves at the point of every shoot, and the shoots likewise, to such an extent as to completely spoil them. Oft-repeated sprayings with XL-All is the best remedy against thrips that I have made a trial of, and next to that is dipping in tobacco-water and soft-soap of good strength, which is an operation more tedious than spraying. Mildew generally makes its appearance after a spell of hot weather, especially if the plants have lacked moisture at the root. Very often its first appearance is noted on the under-surface of the leaves, and it is then apt to have become established before it is detected. When mildew is suspected, let the plants be well wetted with the following:—2 lb. of flowers-of-sulphur, and 2 lb. of lime, previously slaked in 10 quarts of water, boiling these together 20 minutes. For syringing purposes, add 2 wineglassfuls of this mixture to 4 gallons of clean cold water, and use a syringe with the single jet, placing the forefinger

Blanche Burpee, Queen of England, and Snowdrift are good in their way.

Of blues, I would name Countess Cadogan, which has standards slightly hooded, of a bright, shining violet colour, overlaid with a charming light sky-blue; the wings are a pure sky-blue with lavender keel—this is undoubtedly a charming variety. Navy-Blue was sent out by Burpee last year; it is a dark blue flower, the standards of a brilliant royal purple, the wings violet with a lighter keel. Captain of the Blues and Emily Eckford are equally desirable varieties where a number are required, perhaps.

My choice of blush-coloured varieties includes Duchess of Sutherland, a pearl-white, delicately suffused with light pink; the standards slightly hooded; the blossoms widely placed on the stems, which improves the variety in effect—individually, it is one of the most charming varieties. Countess of Aberdeen, white, suffused with pale pink, has finely-formed standards, and altogether it is a pleasing flower. Mrs. Fitzgerald is of a soft, creamy tint, flushed and edged with pale rose.

In claret-tinted flowers there is Duke of Westminster, a deep rose-tinted maroon, overlaid with bright violet—a quite distinct, novel, and pleasing variety.

Flowers with cream-white grounds and tinted, are Venus, although somewhat old, still one of the best in this section, flowering freely; the colour is salmon-buff, and the standards are delicately shaded rosy-pink. Lady Beaconsfield has salmon-rose tinted standards, and pale yellow wings. Crown Jewel, Coquette, and Lemon Queen are also desirable where a larger number are required.

In crimson flowers there are several varieties which, if not synonymous, are too near alike to be separated, viz., Salopian, Mars, Wide-awake, and Firefly. Mars is, perhaps, the most preferable, as with age, it remains brighter than Salopian; the colour is a bright fiery crimson, deepening with age.

Flowers of indigo tint are Duke of Sutherland, standards deep claret, with a deeper flush of maroon on the back; the wings are a bright indigo-blue, very attractive, especially as the keel is of a pale blue tint—it is a handsome variety, either when growing, or as a cut bloom. Shazada and Indigo King belong also to this type.

In lavenders there are several charming varieties. Lady Griseld Hamilton is, perhaps, the most attractive of all; the colour is a shining pale lavender, deepening towards the base of the standard. Lady Nina Balfour, Lottie Eckford, and Countess Radnor, are distinct, but hardly desirable, except where a large collection is grown. Golden Gate is of an attractive tint of pinkish-lavender, with a rose-pink suffusion of the standard deepening towards the base.

The lilac section is represented by Lady Skelmersdale and Colonist, both distinct and desirable varieties. The former has bright, rosy-lilac standards, the white wings are slightly tinted with the same hue—a distinctly novel and pleasing variety. Colonist has soft lilac wings, and rosy-lilac standards—a distinct and pleasing variety, of vigorous growth, flowering freely on stout stems.

Magenta-coloured varieties are not numerous, although one of the finest varieties in cultivation. Calypso is included in this class; the standards of this variety are especially bold, of a rich bright magenta tint, flushed with mauve; the wings delicate mauve, forming a striking contrast.

Maroon-coloured varieties consist of no fewer than four names, each beautiful, but when compared with each other it is doubtful if they are all sufficiently distinct. They are named Black Knight, Othello, Stanley, and Boreatton. Black Knight, in my opinion, is the most desirable of them all. The colour is a deep maroon, with an intense metallic lustre on the standard; the keel pale purple, giving a distinct character to the flower.

In mauves, I include a variety which is regarded by many gardeners and others as the finest variety in commerce, viz., Fascination. The standards are of a delicate magenta-mauve, the wings deep

mauve, and when on the plant or used in glasses, &c., it always charms; the growth is vigorous, and the blossoms abundant on stout stems. Dorothy Tennant, although several years older, is well worthy of cultivation, being very distinct, of strong growth, and free to flower; the colour of the wings is puce-violet, with standards of a rosy mauve tint.

Of orange-coloured varieties there are no fewer than eight, viz., Gorgeous, Triumph, Chancellor, Countess of Powis, Lady Penzance, Meteor, Orange Prince, and Lady Mary Currie. In making a selection, I place the American raised Gorgeous at the head of my list. It is a striking variety; the standard of a salmony-orange tint, and the wings of soft rose, with deeper coloured veins. Lady Mary Currie has deep orange-pink standard, wings flushed with rose. Chancellor and Triumph have hardly enough orange in them to warrant their inclusion in this section.

Of pink-flowered varieties there are, as might be expected, no fewer than ten. Mrs. Gladstone, quite one of the first in the section to be sent out, received a certificate in 1891; it is distinct and pretty in colour, but in growth and productiveness is now surpassed. Lovely is a striking variety of a pleasing shade of pink, with a deeper suffusion at the back of the standard.

Duchess of Westminster has flushed pink wings, which deepens in the standard, terminating with a flushed apricot suffusion; the blooms are rather small. Prima Donna is in the way of Lovely, but inferior to it. Hon. F. Bouverie has coral pink standards, veined deeper, and pale pink wings. Countess of Lathom, too, nearly resembles this last.

In Purples, Monarch is the only desirable variety; the standards are bronzy-crimson tint, with wings of an intense deep blue colour.

The rose-coloured varieties, as might be expected, are many, rendering a selection difficult, for no fewer than twelve come under this heading. Her Majesty, a soft rosy-pink self, remains still one of the best. Prince of Wales is a handsome striking variety, with standard of a bright rose tint with deeper veining and paler wings; the flower possesses a strong flower-stalk and large blossoms. Mrs. Dugdale, too, nearly resembles the former to be included. Lord Kenyon is distinct from the above, in that the standards are flushed and veined more deeply with rose. Chancellor is classed as an orange-coloured variety, but it properly belongs to the rose-coloured section; it is a distinct variety, being a rose self heavily veined with a deeper tint. Triumph, too, comes under the same category, it has deep rose-coloured standards with paler wings and keel.

Of scarlet-tinted varieties, Prince Edward of York, Princess Victoria, and Duchess of Edinburgh, are supposed to represent the section. The first-named is a distinct type of flower, and an acquisition, but how it can be classed as scarlet is beyond my comprehension. The standards certainly contain some red-scarlet colouring, but the wings are pale puce; it is an attractive variety well worthy of attention by cultivators.

What are known as yellow-flowered varieties are represented by Queen Victoria, Primrose, Mrs. Eckford, Cream of Brockhampton, and Golden Gleam. The former is distinct, and therefore desirable; its flowers are of great size, supported on stout stalks. The colour is soft yellow with a suspicion of purple. Any one of the remainder named may be cultivated as a yellow-flowered variety.

The striped section has of late received many additions and found many admirers: Aurora, Gaiety, Mrs. Joseph Chamberlain, Mikado, Midnight, Princess of Wales, Senator, and Pink Friar, are all names that are selected as being representative of the type.

Midnight will appeal to the majority of cultivators; it much resembles Senator in colour, except that the standards exhibit a bronzy tint in distinct waves, rendering it quite conspicuous. America, or as some name it B. P., is perhaps the brightest

form of a striped flower, and is scarlet on a white ground, and therefore attractive; Aurora, is a white flower flaked with orange-salmon; Mrs. Joseph Chamberlain, white striped and heavily flaked with bright rose, a fine bold variety; Princess of Wales is the best of those with purple or mauve stripes.

In addition to the above, Mr. H. Eckford has the following new varieties: Miss Wilmott, which is best described as an improved Gorgeous; the growth vigorous, with strong flower-stalks, and flowers of an immense size. Jeanie Gordon: this is a hooded variety, with pale rose-tinted standards and cream-white wings veined and flushed with carmine. Lady M. Ormsby Gore is after the style of Queen Victoria, excepting that the blooms are more inclined to pink than that variety. George Gordon is an effective variety, best described as a lake-coloured self. Coccinea hardly comes up to its name in colour, is more like Her Majesty, and it has the peculiarity of showing at times a double set of wing-petals, and may be the forerunner of a double-flowered variety—not that this would be an acquisition. *E. Molyneux, Swanmore Park, Hants.*

Obituary.

JAMES GODFREY DEAN.—We regret to announce the death in his seventieth year of Mr. James Godfrey Dean, head gardener at Titsey Place, near Limpsfield, Surrey, which took place very suddenly on the 2nd inst. at Titsey from apoplexy. Mr. Dean had been in failing health since an attack of influenza which he had about four years ago. For forty-seven years he had been in the family of the Leveson-Gowers and their relatives, as will be seen by the following record. He was born at Stoke Farm, Slough, his father being the steward. His apprenticeship was served at General Howard Vyse's, Stoke Place, under Mr. Patrick, one of the greatest fruit-growers of the day. He had a wish to become an artist, but was persuaded not to by Miss Vyse, and gardening, he then said, was the only other thing that he cared for. After serving his apprenticeship he went to Dropmore under Mr. P. Frost as an improver. He then took a foreman's place at Lord Boston's, at Hedsor. He next went to the Honourable Granville Ryder's (a relative of the Leveson-Gower family) at Westbrook Hay, as gardener under the bailiff, Mr. Tranter, remaining there two years. At the end of that time, viz., in April, 1855, he entered the service of Wm. Gresham Leveson-Gower, Esq., of Titsey Place, grandfather of the present owner of Titsey Place, Chas. Granville Gresham Leveson-Gower, Esq., as head gardener, staying there five years. After leaving Mr. Leveson-Gower's service, he went as head gardener to Joseph Ridgeway, Esq., brother-in-law of the before-mentioned Mr. Wm. G. Leveson-Gower, remaining there over six years. His next place was at Hams Hall, Birmingham, as head gardener to the Rt. Hon. Sir Chas. Adderley (now Lord Norton), brother-in-law of the late Granville Wm. Gresham Leveson-Gower, Esq., where he remained nine years. Owing to his wife's delicate health, Mr. Dean was compelled to leave there, and the head gardener's place at Titsey Place being vacant, he was invited by Mr. Granville W. G. Leveson-Gower to take it again, which he did in October, 1875, and has remained there ever since.

Mr. Dean was always willing to help all young gardeners, and give them the best practical advice in his power. He had a wonderful memory for the names of the different kinds of fruit and flowers, and was an excellent cultivator of them, as also of vegetables and plants generally, and has won many prizes and certificates at local horticultural shows, and at Chiswick and the Crystal Palace. In 1887 he won a Bronze Medal of the One-and-All Agricultural and Horticultural Association Show; and in the same year the Sir Joseph Banks Bronze Medal of the Royal Horticultural Society at the National Co-operative Flower Show.

The gardens and grounds under Mr. Dean's care

were always kept in excellent order, and all who paid him a visit were always made welcome.

He will be much missed by all who knew him; his cheery manner, kindness of heart, and good-nature, having greatly endeared him to them.

Much sympathy is shown to the widow and daughters (two) in their sudden bereavement, especially by the family with whom he had been so long connected.

The funeral took place at Titsey churchyard on Saturday last, the 4th inst.

Mr. Dean was a life-member of, and had for many years been an annual subscriber to, the Gardeners' Benevolent Society.

JOHN LAING.—We deeply regret to have to announce the death on the 8th inst., from apoplexy, of this distinguished and much esteemed horticulturist in his 77th year. Among nurserymen and hybridists he was in the foremost rank, and his genial qualities endeared him to all that met him. In early life he devoted much attention to botany



THE LATE JOHN LAING.

in Edinburgh, his collection of Mosses being remarkable. At the moment we have no particulars of his early life, but when we first knew him he was a partner in the firm of Downie, Laird & Laing, of Edinburgh. Subsequently he represented that firm in London, but for many years past he was the head of the firm of John Laing & Sons, of Forest Hill.

As a hybridist and a raiser of florists' flowers, Pentstemons, Clivias, Streptocarpus, Gloxinias, and the like, he did good service; while his work with the tuberous Begonias completely revolutionised that genus. For that alone, his memory will stand out prominently for generations to come. To the gardening charities he did yeoman service, and in all public horticultural affairs he was an active participator till declining health necessitated his partial retirement.

ENQUIRY.

A CORRESPONDENT, "W. R.," would be glad to hear of the whereabouts of Mr. Thomas Reid, landscape gardener, and at one time a contributor to the pages of this journal.

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

JULY 31.—*Present*: Dr. M. T. Masters, in the Chair; and Dr. Russell, Rev. W. Wilks, and Rev. G. Henslow (Hon. Secretary).

Dissected Peaches.—Mr. ROWLANDS, of Bridge Hall Gardens, Bury, sent samples attacked by the "Peach-blight." The Peaches become arrested in patches, never ripening where the fungus is located. Sprinkling with sulphur is the best remedy.

Injured Roses.—Mr. KITCHEN, Gardens, Greenwell Ford, Durban, forwarded shoots spat and decayed. The appearance suggested them being cracked by frost, and subsequently attacked by fungi.

Some Old Nymphs.—Mr. H. T. BARN sent a specimen of twin flowers united, of the lavender-coloured *Nymphs stellata* from South Africa.

Stanleya pinnatifida.—Flowering sprays of this Crucifer were sent by Mr. B. S. S. S. It is remarkable for the long spreading filaments and yellow sepals. It is a native of California, and figured in Gray's *Bot. Amer. Jour.*, pl. 65.

Fruit Committee, Chiswick.

AUGUST 3.—In wild, stormy weather there was but a small attendance at the meeting of the Fruit Committee convened here on the above date.

It was mentioned that the First-class Certificate granted an early Potato at the previous meeting under the name of Sharpe's Early Kidney had been corrected, the proper name being Denby Castle. Some sixty varieties of Potatoes were tried, chiefly of early and mid-season varieties, and there are several scores of later ones, old and new, to be seen at a future time. Nine varieties were cooked, amongst which the well-known Beauty of Hebe was one of the best. This was awarded three marks, and also was *Potato* (new), a very handsome free-cropping kidney. Awards of Merit previously made to Sutton's Harbinger (dwarf and free), Early Peter (very free cropper), and Sharpe's Victor, now as a border variety, were confirmed. One or two other very fine croppers, are to be seen again.

A small trial of Dwarf Kidney Beans was next inspected, and three marks were given to Early Favourite (Veitch) as very early and free-cropping. A hybrid variety from the Dutch Runner and a dwarf, having white flowers, was of great promise, and is to be seen again at a later date.

DEVON AND EXETER HORTICULTURAL.

AUGUST 3.—This, the 191st exhibition of the Society, was held in the accustomed place, Northernhay Park, on the above date, and in rainy weather. The date was fourteen days earlier than usual, and as a consequence the exhibits were fewer, fruit was not fit, and specimen plants not sufficiently forward; and taken as a whole the exhibition was below that which is customary. It seemed as if some of the exhibitors were holding back their exhibits for the Taunton show, which is held at the usual time in the second week of August, and where the prizes are of higher value. The vegetable classes were as usual very well shown, and entries numerous.

CUT FLOWERS, OPEN.

The best twenty-four show and fancy Dahlias, and twenty-four Cactus varieties, were those shown by Mr. W. B. SMALE, nurseryman, Torquay; and Messrs. W. TUPPIN & SONS, nurserymen, Newton Abbott, were 2nd in each class.

The best twenty-four Gladioli, distinct, were shown by Mr. S. DORRIT, Wellington; and Messrs. W. TUPPIN & SONS were 2nd.

The finest twelve blooms of Tea Roses were those exhibited by Messrs. JARMAN & Co., of Chard. In these classes the competition was very limited.

TABLE DECORATIONS.

There were four exhibits of these objects as compared with nine last year. The Silver Cup (value £5) went to Mr. BARNES, gr., Winslade, Exeter; and the 2nd prize fell to Mr. F. LOCK, gr., Newcombes, Crediton. The tables were prettily arranged in all cases, and flowers of Orchids were largely used in the various devices. The table which was awarded the 1st prize was remarkable for the lightness of the arrangement; fronds of *Adiantum gracillimum* were used throughout, and *Oncidium* freely associated with *Odontoglossums*.

SPECIMEN PLANTS.

The 1st prize for twelve stove and greenhouse plants, half to be flowering, fell to Mr. ROWLAND, gr. to W. BROCK, Esq., Parker's Well, who showed the same plants he has shown for a number of years. The flowering specimens were rather late, and will be in better condition in a week. There was really no competition.

For six specimens, and for six stove and greenhouse plants, Mr. BROCK's gardener was again 1st, there being no 2nd prize awarded owing to lack of competition.

In the class for six stove and greenhouse exotic Ferns there were several entries, and the competition was fairly lively. 1st prize went to Mr. ROWLAND; and 2nd to Mr. J. Harding, gr. to J. H. LEY, Esq., Trehill.

GROUPS.

Miscellaneous plants arranged for effect in an oval 15 ft. by 11 ft., Mr. W. R. BAKER, gr. to Lady DUCKWORTH, Knightleys, was 1st; and Mr. ROWLAND 2nd. In this class the competition was keener, but although Mr. BAKER's group was the more effective, it lacked brightness.

For the smaller group, 11 ft. by 6 ft., Mr. J. HARDING was awarded the 1st prize, no 2nd being forthcoming. *Humea elegans*, *Galtonia candicans*, *Tuberose*, *Gladioli*, *Codiaeums*, *Adiantums*, and *Dracaenas* were freely used in the groups. The Orchids failed to bring any competition.

PLANTS IN BLOOM.

Mr. Rowlands, gr. to W. BROCK, Esq., was 1st for six well-grown Fuchsias; and Mr. COLE, gr. to W. B. HEBERDEN, C.B., Elmfield, was 1st for six Gloxinias, having flowers and fine colour and size—an exceptionally fine lot. Rev. S. P. COLERIDGE, Alington, was a close 2nd. Mr. W. R. BAKER, gr., Knightleys, was 1st for six Cockscombs of the Glasgow Prize strain; Sir JOHN SHELLEY was 2nd. Tuberous-rooted Begonias and Caladiums, were well shown by Mr. W. R. BAKER, who was 1st with both.

Six zonal Pelargoniums, single-flowered, Mr. T. STARK, gr. to MARK FARRANT, Esq., St. Thomas, was 1st, and Mr. ROWLANDS, 2nd, these awards changing places in the class for double-flowered varieties.

CUT-FLOWERS.

For twelve Gladioli distinct, Mr. S. Bird, gr. to S. DORREY, Esq., Wellington, was 1st. The blooms being good but the spikes rather short.

Dahlias were very poor.

For twelve Roses distinct, and for six bunches of Garden Roses, Mr. Fletcher, gr. to Col. HALFORD THOMPSON, Teignmouth, won a well-merited 1st in each class. Bardon Job, Marchal Niel, Madame Berard, and Niphetos being his best blooms.

Twelve Carnations, distinct, were well shown by Mr. Thos. Hamlyn, gr. to Mrs. E. BROOKES-SMITH, who was 1st, among them being fine blooms of Voltaire, Yellow Hammer, Atalanta, Lady Hindlip, Regatta, and Perseus.

FRUIT.

Owing to the earliness of the show, fruit was rather weak in all the classes. For the collection, Mr. J. Lock, gr. to C. S. EADY, Esq., Weybridge, was 1st; and Mr. J. Hill, gr. to V. STUCKEY, Langport, was 2nd. Among the finer fruit were Grapes, Muscat of Alexandria, Madresfield Court, Spencer Nectarine, Czar Plum, Moor Park Apricot, Crimson Gaiende Peach, Sutton's Al Melon.

In the smaller collection, which was won by Mr. W. R. Baker, gr. to Lady DORWORTH, were fruits of Dymond Peach, Pineapple Nectarine, Moor Park Apricot, Taunton Hero Melon, and Black Hamburg Grapes. C. SWINTON EADY, Esq., was 1st for three bunches of Muscat of Alexandria; good bunches, but not quite ripe. Mr. J. Lloyd, gr. to V. STUCKEY, Esq., was 1st for three good bunches of Madresfield Court Grapes. The 1st prize in the any other variety class was won by Mr. Barnes, gr. to Rev. A. H. HAMILTON GILL, with Duke of Buccleuch; and the Apricot class by Major BIDELEIGH, Duryard (gr. G. Ash), with Moor Park.

VEGETABLES.

The Silver Cup, value £5, was handsomely won by Mr. J. Mairs, gr. to Sir JOHN SHELLEY, Bart., Shobrook, his collection containing Sutton's Al Cucumber, Veitch's Large Red Tomato, Snowdrop Potato, Standard-bearer Celery, Monarch Leek, Veitch's New Intermediate Carrot, Cranston's Excelsior Onion, Sutton's Best-of-All Runners, Alderman Pea, and Autumn Giant Cauliflower. Mr. Wilkins, gr. to Lady THEODORA GUEST, was 2nd.

TRADE COLLECTIONS.

Messrs. R. VEITCH & SON, nurserymen, Exeter, showed *Nymphaea gloriosa*, *N. Robinsoniana*, *N. Lydeckeri rosea*, and *N. chionanella*, very well amidst a general collection of conservatory plants and cut flowers, and a pretty miniature rockery.

Mr. W. J. GODFREY, Exmouth, had a nice display of Carnations, in which were the new Beauty of Exmouth and Mrs. George Foster, and a fine group of Cannas, Carnations, and Sweet Peas.

Mr. J. WALTERS, Mount Radford, showed Roses; Mr. F. C. FOWLE, Teignmouth, and Mr. H. W. WOOTELIN, Dawlish, Carnations; Messrs. TUPLIN & SONS, Newton Abbot, Mr. W. B. SMALE, Torquay, and Messrs. JARMAN & CO., Chard, Dahlias, Roses, and other cut blooms.

An attractive exhibit was that of the BEE KEEPER'S ASSOCIATION, which filled one of the tents.

THE MIDLAND COUNTIES CARNATION.

AUGUST 1 & 2.—As already stated by us, this was a successful exhibition, the entries numerous, and the quality of the bloom very fine throughout. Few places are so well adapted as the show-house in the Edgbaston Botanical Gardens to show off cut blooms of Carnations to so great advantage. There were festoons of Bougainvillea, Lapageria, and Cobaea overhead, and to all the blooms back-grounds of Fuchsias; and Mr. Latham to drape the show tables in an effective manner. The weather was pleasant, and the flowers kept quite fresh until the close. The white ground Carnations and Picotees were not so numerous as usual, it being a trifle late for them, but that which was staged was good, especially the Picotees from north growers; but it appears to be quite certain that the brilliant Selfs and the diversified Yellow Grounds and Fancies have become very much grown, specially for exhibition purposes. Mr. MARTIN R. SMITH has worked quite a revolution in Carnations, and his excellent work as a raiser was seen in the large number of varieties of his raising that were staged in competition.

CARNATIONS, FLAKES AND BIZARRES.

The best twelve dissimilar came from Mr. THOMAS LORD, Hole Bottom, Todmorden, and comprised pure well-marked blooms of S. B. Robert Lord, Admiral Curzon, and Robert Houlgrave; C. B. S. J. Hedderley, J. D. Hextall, and Master Fred, P. P. B. Arline; P. F. George Melville and Gordon Lewis; S. F. John Wormald and Sportsman; R. F. Mrs. May. Messrs. THOMSON & CO., nurserymen, Spark Hill, Birmingham, were 2nd, their chief flowers were P. F. Gordon Lewis and George Melville; C. B. J. S. Hedderley; S. F. Sportsman; and S. B. Robert Houlgrave. Mr. R. SYDENHAM, Bristol Road, Birmingham, was 3rd.

There was a keen competition with six blooms, and Mr. R. C. CARTWRIGHT, Selly Park, was placed 1st with well-marked blooms of C. B. J. S. Hedderley; S. F. Guardsman; P. P. B. William Skirving; P. F. Gordon Lewis; R. F. Rob Roy; and S. B. Admiral Curzon. Messrs. SUTCLIFFE & UNDERLEY, florists, Hedden Bridge, were 2nd; their most pro-

minent blooms were C. B. S. J. S. Hedderley and Master Fred; and S. B. Robert Houlgrave. 3rd, Mr. A. R. BROWN, Handsworth, Birmingham.

PICOTEES, WHITE GROUND.

The best twelve came from Mr. T. LORD, and they were characterised by great refinement. He had H. R. E. Gany-mele, Brunette, and John Smith; H. P. E. Mrs. Openshaw and Muriel; L. P. E., Harry Kenyon and Mrs. Gorton; H. Rose E., Lady Louisa and Little Phil; and L. Rose E., Favourite, and Fortrose. Mr. R. C. CARTWRIGHT came a close 2nd; his stand contained excellent illustrations of H. Rose E. Little Phil, L. P. E. Pride of Leyton, H. P. E. Amy Robsart, H. P. E. Mrs. Openshaw, H. Rose E. Isabel Lakin, and L. Rose E. Favourite. 3rd, Mr. R. SYDENHAM.

There were twelve stands of six Picotees. Mr. A. CHATWIN, Edgbaston, was 1st, having in good character H. Rose E. Mrs. Beswick, H. P. E. Polly Brazil, Amy Robsart, and Miriam; L. P. E. Pride of Leyton, and H. Rose E. Clio. 2nd, Mr. T. W. GOODFELLOW, Walsall. 3rd, Mr. H. SMITH.

SELF CARNATIONS.

These were as usual a most attractive feature; eight collections competed. Mr. A. W. JONES, Handsworth, was 1st with flowers remarkable for their purity and brilliancy, regard being had to the locality in which they are grown, the size of his garden, and its surroundings. His varieties were Cecilia, with a rich depth of yellow; Mrs. Eric Hambro, the best white; Barras, Britannia, Mrs. McRae, Enchantress, Much the Miller, Boreas, of a fine maroon shade; Her Grace, Benbow, deep amber; Lady Hindlip, and The Briton. 2nd, Mr. R. SYDENHAM, who had Agnes Sorel, crimson; Benbow, Queen of Scots, Diane, yellow; Seagull, Boreas, and Roseleigh Gem, a distinct rose and heliotrope variety, raised by the exhibitor. Mr. A. CHATWIN, Edgbaston, was 3rd.

There were sixteen stands of six selfs, and here Mr. R. C. CARTWRIGHT was 1st with superb blooms of Enchantress, Her Grace, Seagull, Germania, Benbow, and Boreas. Mr. C. W. KEMP, Edgbaston, came 2nd; he had fine blooms of Germania, The Briton, Mrs. Eric Hambro, Seagull, Lady Hindlip, and Britannia. 3rd, Mr. W. BELLAMY, Penkridge, Staffs.

PICOTEES, YELLOW GROUNDS.

Some marvellous blooms of these were staged in most of the seven stands which competed in this class. The 1st prize went to Mr. A. W. JONES, who had highly developed blooms of Badminton, Lady Bristol, Onda Wanderer, Mohican, Duke of Alva, Empress Eugénie, Heather Bell, Mrs. Tremayne, Hygeria, Stanley Wrightson, and Hesperus, a very good selection indeed. Messrs. THOMSON & CO. were 2nd, also with very fine blooms, particularly Hygeria, Miss Violet, May Queen, Mohican, Mrs. Tremayne, Mrs. Herbert, and Empress Eugénie. 3rd, Mr. A. CHATWIN.

There were ten stands of six varieties: Mr. R. C. CARTWRIGHT was awarded the 1st prize, having refined blooms of Duke of Alva, Lady Bristol, Mrs. Tremayne, Effie Deans, Mohican, and Stanley Wrightson. Mr. C. F. THURSTAN, Wolverhampton, was 2nd, with only just inferior blooms of Lady Bristol, Dr. Vish, Duke of Alva, May Queen, and two others. Mr. W. H. PARTON, Jun., King's Heath, was 3rd.

FANCY CARNATIONS.

Not less striking were the blooms of these; they are among the largest and fullest of the Carnations grown, nearly approaching the Malmisons in size. Here Mr. A. W. JONES was again to the fore, taking the 1st prize with Queen Bess, Voltaire, Aglaia, Eldorado, The Gift, Brodrick, Perseus, Monarch, Galileo, Czarina, Heroine, and Guinevere. Messrs. THOMSON & CO. were placed 2nd, with fine examples of Swallow, Voltaire, The Gift, Emperor, Perseus, Faust, Thirstane, &c. Mr. A. R. BROWN was 3rd.

There were fourteen collections of six fancies. Mr. C. W. KEMP was placed 1st, with Perseus, Voltaire, The Gift, Monarch, Miss Mackenzie, and Brodrick. Mr. R. C. CARTWRIGHT came 2nd, with Voltaire, The Gift, Hidalgo, Perseus, Pagan, and Goldylocks. Mr. T. J. HARPER, Aston, was 3rd.

A maiden grower's class for six blooms of Carnations or Picotees brought a remarkable competition. Mr. C. CHATWIN, Handsworth, was 1st; and Mr. D. GILLENS, Lozells, 2nd.

UNDRESSED OR BORDER FLOWERS.

Then followed a dozen or so classes for these, but on referring to the conditions covering these classes, it is seen that although a little dressing of the petals may be permitted, any perceptible amount of dressing beyond this will lose points in judging. In these classes the flowers were set up in small vases, with a sprig or two of foliage to each. In not a few cases the flowers were not named. The best twelve selfs shown under such conditions came from Mr. SYDENHAM; Mr. C. F. THURSTAN came 2nd.

With six varieties, Mr. CARTWRIGHT was 1st; and Mr. H. SMITH 2nd. The varieties shown were in the main those given in the dressed classes.

Mr. A. W. JONES had the best twelve Y. G. Picotees; Messrs. THOMSON & CO. were 2nd. With six blooms Mr. CARTWRIGHT was 1st, and Mr. THURSTAN 2nd. Mr. T. LORD was 1st with twelve white-ground Picotees; and Mr. A. BROWN 2nd; while in the class for six varieties, Messrs. CARTWRIGHT and THURSTAN were again 1st and 2nd. With twelve white-ground bizzarres and flakes, Mr. LORD was 1st, and Messrs. THOMSON & CO. 2nd; while with six varieties, Messrs. CARTWRIGHT and THURSTAN took the leading prizes. In all the foregoing undressed classes there was a good competition, but the largest, fullest, and brightest flowers were selected by the judges.

There were four classes for blooms staged in threes; the

best six varieties of selfs were from Mr. R. C. CARTWRIGHT, and consisted of Roseleigh Gem, Isinglass, Scarlet, Her Grace, white; Cecilia, yellow; Sea Gull, blush; and Nabob, salmon. Messrs. THOMSON & CO. were 2nd; and Mr. A. CHATWIN, 3rd. Mr. A. W. JONES had the best six trebles of Yellow Grounds, staging in fine character, Mrs. Tremayne, Empress Eugénie, Hesperus, Mohican, Stanley Wrightson, and May Queen. Messrs. THOMSON & CO. were 2nd; and Mr. CHATWIN, 3rd. The best six fancies in three came from Messrs. THOMSON & CO., they had Irene Thomson, Voltaire, Perseus, Moonlight, Gossip, and Golden Eagle. Mr. A. CHATWIN was 2nd, and Mr. JONES 3rd. An interesting class was found in that for three varieties of Clove-scented Carnations, also shown in trebles. Mr. R. C. CARTWRIGHT was placed 1st with Endymion self, Miss Mackenzie, Y. G. Fancy, and Golden Eagle, Y. G. Picotee. Messrs. THOMSON & CO. were 2nd with Uriah Pike, Endymion, and Helmsman, all selfs; Mr. W. BARSBY, Leicester, was 3rd.

SINGLE BLOOMS OF CARNATIONS.

A very large number of blooms were staged, and the following was the selection of the judges:—S. B.'s Robert Houlgrave and Othello; C. B.'s, Master Fred and J. S. Hedderley; P. P. B.'s, Wm. Skirving and Sarah Payne; S. F.'s, Sportsman and Guardsman; R. F.'s, Mrs. T. Lord and Merton; P. F.'s, Gordon Lewis and George Melville. Picotees: H. Red E. John Smith and Isabel Lakin; L. Red E. Mrs. Gorton and Thos. Williams; H. Purple E. Muriel and Mrs. Openshaw; L. P. E. Pride of Leyton and Lavinia; H. Rose E. W. H. Johnson (new and very fine), Clio, and Scarlet Queen; L. Rose E. Favourite and Fortrose; Y. G. Empress Eugénie and Mrs. Douglas.

OTHER SECTIONS.

Y. G. fancy Queen Bess and Golden Eagle, Fancy, sport from Monarch and Pelago, white self; Mrs. Eric Hambro, and Much-the-Miller; Blush self; Seagull and gentle Jackie; Yellow self; Germania, which gained the four leading prizes; Buff self; Benbow and Mrs. Palmer; Rose self; Exile and Sadek; Salmon; Enchantress and Endymion; Scarlet self; Isinglass and Mrs. Macrae; Dark crimson or maroon: Comet and Boreas; and any other dark shade: Roseleigh Gem and Garville Gem.

SEEDLINGS

A large number of these were staged, but two only received Certificates: one a heavy scarlet edged Picotee, named W. H. Johnson, edged with an unusually bright tint, on a solid white ground; and Amphion, a yellow-ground Fancy, heavily edged with bright rosy-purple, with pencilled lines running down nearly to the centre of the flower.

SWEET PEAS.

Bunches of these in twelves and sixes made a very pretty display. The twelve staged by Mr. A. W. HULSE, Birmingham, afforded an excellent object lesson in setting up, while they were singularly fine in quality, the varieties Royal Rose, Countess of Radnor, Prima Donna, Mars, Triumph, Stanley, Blanche Burpee, Captain of the Blues, Queen Victoria, Prince of Wales, Eliza Eckford, and Lady Nita Balfour. These deservedly won the first of Mr. HENRY ECKFORD's special prizes. Mr. A. T. SIMPSON, Shipston-on-Stour, was 2nd. Mr. R. SYDENHAM's special prizes for nine bunches brought an excellent competition. Mr. A. Cryer, gr. to J. A. KENRICK, Esq., Edgbaston, was 1st, admirable bunches of Her Majesty, Gorgeous, Firefly, Emily Henderson, Lovely, Triumph, Lady Mary Currie, Lady G. Hamilton, and Queen Victoria, these also were admirably staged. Mr. W. BELLAMY, Pinkridge, was 2nd, also with varieties of high quality.

Floral decorations in Sweet Peas were somewhat lumpy, while bouquets, sprays, and button-holes fell below the usual level of Birmingham work. There was a class for twelve bunches of hardy perennials, which brought a fine lot from Mr. A. CRYER.

Miscellaneous exhibits included a very fine collection of Begonias from Mr. B. R. DAVIS, of Yeovil; cut blooms of hardy flowers from Messrs. W. F. GUNN & CO., Olton; from Messrs. HEWETT & CO., Solihull; and Mr. J. H. WHITE, of Worcester; collections of Carnations from Messrs. DICKSON & CO., LTD., Chester; and WATSON, of Edgbaston; and Sweet Peas from Mr. SIMPSON.

In the evening Mr. R. SYDENHAM entertained a large party at supper in the Botanical Gardens.

NORTHAMPTON HORTICULTURAL.

AUGUST 6.—The nineteenth annual show was held in the grounds of the President, J. COOPER, Esq., Delapre Park. The exhibition was quite up to the usual standard, but unfortunately marred by the ungenial weather, which is to be much regretted from a financial point of view.

GROUPS AND PLANTS.

For a group of miscellaneous plants, Mr. CYPHER was 1st, with a beautifully arranged lot of plants of the usual character in regard to material; Mr. VAUSE, Leamington, was 2nd, the centre to his group being a Phoenix, with corner plants of Kentias, and the rest consisting of Cocos Weddelliana.

Mr. CYPHER was 1st for twelve stove and greenhouse plants, having some magnificent specimens of Bougainvillea Sanderiana, Codium, C. Queen Victoria, Cheloni, Stephanotis floribunda, Erica Irbyana, E. Altoni, Statice profusa, and other plants. Mr. VAUSE was 2nd, his best plants being Codium Johannis, Cycas revoluta, and Rondeletia speciosa.

Mr. W. Woods, gr. to J. COOPER, Esq., Delapre Abbey, Northampton, was 1st for six specimen Ferns, with good pieces of *Adiantum latifolium*, *Davallia filipes*, *Phlebodium aureum*, *Asplenium bulbiferum*, *Adiantum cucullatum*, and a *Polypodium*. Mr. Holland, gr. to F. BOSTOCK, Esq., Springfield, Northampton, was 2nd, having some good specimens of *Gymnogramma sulcifera*, and *Neottopteris nidus-avis*.

Mr. Woods was 1st for six Stove and Greenhouse plants, having *Pelargonium Chas. Turner*, *Plumbago capensis*, *Phoenix reclinata*, &c.; and Mr. Owen Soden, gr. to F. ADSTY, Esq., Northampton, was 2nd, having a good specimen of *Trachium cornutum* in his collection.

Mr. Knightly, gr. to Sir HERWARD WAKE, Courtenhall, Northampton, had the best Fuchsias, viz., *Molesworth*, and *Rose of Castle Improved*, were particularly good.

Mr. Woods and Mr. KNIGHTLEY were 1st and 2nd for six specimen *Pelargoniums*.

For a smaller group of miscellaneous plants, Mr. Silas Cole, gr. to the EARL STUNGER, Althorp Park, was 1st with a beautiful collection, having *Kentia Fosteriana* in the centre, and the four corner plants of *Cocos Weddelliana*, nice clean plants, and the centre was filled up with *Coleus*, *Lilies*, *Caladiums*, *Eulalias*, *Pandanus*, &c. Mr. Woods took 2nd prize, the chief feature was the *Ruby Castle Carnation*.

MESSRS. COLES, HOLLAND, and SODEN, were 1st, 2nd, and 3rd for Table Plants.

FRUIT AND VEGETABLES.

In the open class for eight varieties of fruit, Mr. Goodacre, gr. to the EARL of HARRINGTON, Elvaston Castle, was 1st, having good Black Hamburgh and Canon Hall Musca Grapes, Czar Plums, Barrington Peaches, Lady Sudeley Apples, Lord Napier Nectarines, Countess Melon, and Rayer-maker Peaches; Mr. Cole was 2nd, his Peaches being particularly fine examples.

The best three bunches of White Grapes came from Mr. A. Child, gr. to H. A. ATTENBOROUGH, Esq., Catesby House, Daventry, the variety being *Muscato de Alexandria*; Mr. Cole was 2nd. For three bunches of Black Grapes, Mr. Woods was 1st, with Black Hamburghs, of good colour; and Mr. Child was 2nd, with large bunches of Madresfield Court, of a bad colour.

For the best twelve kinds of vegetables, Mr. Dymock, gr. to WENTWORTH VERNON, Esq., Stoke Bourne Park, Towcester, was 1st with Eclipse Tomato, Best-of-All Bean, Lockie's Perfection Cucumber, Ideal Potato, Paris-Green Artichoke, Autocrat Pea, Blood-red Beet, James' Intermediate Carrot, Moore's Vegetable Cream Marrow, Ailsa Craig Onion, Mammoth Cauliflower, and Snowball Turnip; and Mr. Cole was 2nd, having some very fine Onions in his collection.

For nine varieties, and also for Sutton's Prize, the same gardeners as took the prizes in the previous class, occupied the same positions in this one.

Numerous single dishes of vegetables as well as of fruit were competed for, but being of minor importance we omit them.

A pleasing feature of the show was the beautiful collection of Sweet Peas as cut flowers shown by Mr. COLE. H. K.

CARNATION SHOW AT SOUTHAMPTON.

The Southern Counties Carnation Society held an excellent show of Carnations and Picotees on the Royal Pier, Southampton, on Friday, July 27. The show redounded to the credit of the local exhibitors, and to that of the capable and energetic secretary, Mr. W. GARTON, jun., Roseland, Woolstone. The Pavillion was capitally laid out and decorated, tables being placed in the centre for the principal exhibits, and the flowers were effectively displayed. In the Cup Competition, Mr. MARTIN R. SMITH, Hayes, Kent, won for the second year in succession the Silver Cup (open to nurserymen and amateurs) for twelve best self or fancy Carnations, the Cup becoming the property of the exhibitor. In the amateur class Mr. F. W. FLIGHT won the Cup for the first time. Mr. J. DOUGLAS, Great Bookham, showed a nice collection of varieties of Carnations, which attracted much attention.

The best twelve blooms of flake and bizarre Carnations were those shown by Messrs. THOMSON & Co., Birmingham; and the best six those of Mr. A. H. BROWN, of that city. Messrs. THOMSON & Co. had also the best twelve white ground Picotees; Mr. MARTIN R. SMITH, Hayes, the best twelve yellow ground Picotees, and likewise the best twelve yellow ground and fancy Carnations.

Messrs. THOMSON & Co. had the finest twelve Carnations, selfs; and Mr. W. GARTON, jun., the best six in the self class. The premier Carnation in the open class was shown by Messrs. THOMSON & Co. with a flake variety, and by Mr. and Mrs. W. GARTON with a self.

Mr. C. TURNER and Mr. C. MARTE had the premier fancy bloom; and Mr. M. R. SMITH and Mr. J. DOUGLAS had the finest yellow ground Picotees. Mr. W. GARTON, jun., showed the finest group of Carnations.

Table decorations, objects of the florist's art, vases of Carnations and Picotees, formed pleasing features of the Show.

EBLEY, CAINCROSS, AND SELSEY HORTICULTURAL.

JULY 28.—By the kind permission of the President, E. S. Godsell, Esq., the above show was held in the lovely grounds of Cainscross House on the above date. The exhibits were both numerous and creditable, being staged in two large tents erected just outside the picturesque gardens. The entries were more numerous than those of previous years,

both in the gardeners' or open class and in the cottagers' section of the show. The cottagers alone having 46 entries: 338 vegetables, 60 flowers, and 68 fruits. The vegetables were indeed worthy of special mention: the Potatoes and Kidney Beans being exceptionally fine. Amongst the fruit there was much to admire, Grapes occupying a prominent place in the exhibits. The stove and greenhouse plants were also much above the average. Mr. G. GODSELL, Mr. CYPRER of Cheltenham, Messrs. JEFFERIES of Gloucester, and Messrs. PLAGE of Ryeford, sending non-competitive exhibits.

Before passing from this section, the fine display of zonal *Pelargoniums* exhibited by Mr. F. S. GODSELL must be mentioned, as also the admirably arranged group of miscellaneous plants and *Lilium lancifolium* shown by Mrs. BLACKWELL, all of which easily gained 1st prizes. The table decorations all showed excellent taste; Miss GODSELL obtaining 1st prize with exquisitely arranged Orchids and Maidenhair Ferns. Mrs. F. E. SARGENT's tasteful combination of pink Carnations and *Gypsophila* was awarded 2nd; while the 3rd prize fell to Miss GARRAWAY, who had artistically arranged Sweet Peas, Carnations, and *Gypsophila*.

HANLEY HORTICULTURAL FÊTE.

A special meeting of the Town Council and those interested in the organisation of the horticultural fete was held in the Town Hall, Hanley, on Monday evening, when the Mayor (Mr. F. Ellis) presided. The report of the Finance Committee having been adopted, votes of thanks were accorded to Lady Angela Forbes, who opened the fete, the Mayor and Mayoress, the judges, and others who assisted in making the fete a success. Alderman Cooke presented details of expenses in connection with the fete. The income last year was £2,505 17s. 7d., and the expenditure £1,876 6s. 2d., leaving a profit of £629 11s. 5d. This year the total receipts were £2,644 4s. 2d., and the expenditure £1,843 10s. 9d., leaving a balance in hand of £800 15s. 5d. There might be a few more accounts to come in, which would not exceed £20.

THE SCOTTISH HORTICULTURAL ASSOCIATION.

AUGUST 7.—The monthly meeting of the Scottish Horticultural Association was held last evening at 5, St. Andrew Square, Edinburgh; Mr. Alexander Mackenzie, Warriston Nurseries, presiding.

A paper on "Carnations" was contributed by Mr. R. P. Brotherton, Tynninghame, Prestonkirk, who discussed the early history of this fine flower, numerous specimens of which he exhibited. He treated of its culture, and dealt with its utility for decorative purposes. At the close he was awarded a cordial vote of thanks. Among the exhibits on the table were some beautiful Rose blooms by Mr. M. TONN, Stanwick Place; samples of Parsley by Mr. LITTLE, Largs Castle; and a spray of the crimson-flowering *Eucalyptus floricola*, by Mr. A. McMILLAN, Trinity College, who pointed out that while the seed was sown twelve years ago, this was the first time the plant had flowered. *S. Scotsman*, August 8.

MARKETS.

COVENT GARDEN, AUGUST 9.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day but often several times in one day. ED.]

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, English, per bushel—		Lemons, case	18 0-34 0
Suffolds	3 0-4 0	Melons, each	1 0-2 0
Kewicks	2 0-2 6	Foreign Rocks	2 0-3 0
Julians	2 6	Valencia, cases	(24) 10 0
Quarrendens	5 0-8 0	Nectarines, per dozen—	
Apricots, per dozen	1 6-2 0	Class A.	8 0-10 0
Bananas, bunch	7 0-12 0	Class B.	3 0-5 0
Cherries, English, per sieve	4 0-6 0	Oranges, Murcia, p. case (160)	18 0
Napoleon, fine, per sieve	10 0-15 0	Peaches, per doz.—	
Currants, blk., sieve	8 0	Class A.	8 0-10 0
red, sieve	3 0	Class B.	3 0-5 0
white in gals.	2 0	Pears, Californian, cases	8 0-12 0
Figs (New), per doz.	1 6-2 6	Williams, French, in boxes (48)	4 0-5 0
Gooseberries, sieves	1 6	Pines, each	4 0-7 0
Grapes, Hamburgh, new, per lb.	0 9-1 6	Plums in sieve	1 0-7 0
Alicante	1 0-1 6	English, Rivers, per sieve	2 0
Colmar	1 1-1 6	Raspberries, punnets, doz.	2 0-3 0
Gros Maroc, lb.	1 0-1 6	cwt.	11 0
Muscats, A., per lb.	2 0-2 6	Green Gages in sieves	4 0-5 0
Muscats, B., per lb.	0 9-1 0		
Belgiao, per lb.	0 7-1 4		
in barrels	5 0-7 0		

FLOWERS, &c.	AVERAGE WHOLESALE PRICES.	s. d. s. d.
Asparagus "Fern," bunch	2 0-2 6	
Carnations, per doz. blooms	1 0-2 0	
Cattleyas, per dozen	0 2-10 0	
Eucharis, per dozen	2 0-4 0	
Gardenias, per doz. spikes	1 0	
Gladiolus, scarlet, per dozen	2 6-5 0	
white, per doz.	2 6-4 0	
Lilium Harrisii, per dozen blooms	2 0-3 0	
Lilium laucifolium album, doz. blms.	2 0-4 0	
Lilium rubrum, doz.	2 0-4 0	
Lilium longiflorum, per dozen	2 0-4 0	
Lily of Valley, per doz. bunches	12 0-18 0	
Maidenhair Fern, per doz. bunches	4 0-8 0	
Marguerites, p. doz. bunches	8 0-6 0	
Mignonette, dozen bunches	4 0-6 0	
Montbretias, bunch	0 6	
Odontoglossums, per dozen	1 0-2 0	
Roses, Red, per doz.	1 0-3 0	
Tea, white, per dozen	2 6-4 0	
Safrano, per dozen	2 0-3 0	
Catherine Mermet, per dozen	2 0-5 0	
Smilax, per bunch	4 0-5 0	
Tuberose, per doz. blooms	0 4-0 6	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	5 0-7 0	Ferns, small, per 100	4 0-6 0
Arbor-vitae, var., doz.	6 0-36 0	Ficus elastica, each	1 6-7 6
Aspidistras, p. doz.	18 0-36 0	Foliage plants, var., each	1 0-6 0
specimen, each	5 0-10 6	Lily of Valley, each	1 9-3 0
Cannas, per dozen	18 0	Lycopodiums, doz.	8 0-4 0
Crotons, per doz.	18 0-30 0	Marguerites, per dozen	8 0-12 0
Cyclamen, per doz.	8 0-10 0	Myrtles, per dozen	6 0-9 0
Dracenas, var., per dozen	12 0-30 0	Palms, various, ea.	1 0-15 0
viridis, per doz.	9 0-18 0	specimens, each	21 0-63 0
Ericas, var., per doz.	12 0-36 0	Pelargoniums, scarlet, per dozen	8 0-12 0
Euonymus, various, per dozen	6 0-18 0	Ivyleaf, per doz.	8 0-10 0
Evergreens, var., per dozen	4 0-18 0	Spiraeas, per dozen	6 0-12 0
Ferns, in variety, per dozen	4 0-18 0		

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aubergines, per dz.	1 6	Mushrooms, house, per lb.	0 9-1 0
Artichokes, Globe, per doz.	1 0-1 6	Onions, picklers, per sieve	3 0
Beans, Scarlet Runners, bush.	6 0	Egyptian, per cwt.	4 0
Broad, home-grown, per bush.	1 0-1 6	Green, dozen	2 6-3 0
English, dwarf, per bushel	6 0	Parsley, 12 bunches	1 0
per sieve	3 0	per sieve	0 9-1 0
Beetroots, new, per dozen	3 0	Peas—	3 0-4 0
Beet, per dozen	0 6-0 9	English, per bushel	4 0-6 0
Cabbage, tally	2 0-5 0	in bags—	6 0-8 0
dozen	0 6-1 0	Potatoes, New, per cwt.	4 6-6 0
Carrots, new, p. dz.	1 0-2 6	Radishes, 12 bunches	1 0-1 6
Cauliflowers, per dz.	1 6-3 0	Salad, small, punnets, per dozen	1 3
Oress, per dozen punnets	1 6	Shallots, new, per sieve	2 6
Cucumbers, doz.	1 0-2 3	Spinach, per sieve	1 0-2 0
Endive, new French, per dozen	2 0-2 6	Tomatoes, English, new, per 12 lb.	4 0-5 6
Garlic, new, dozen bunches	2 0	Channel Islands, per lb.	0 2 1/2-0 4 1/2
Horseradish, English, bundle	1 6	Bordeaux, per box	4 0
foreign, per bundle	0 10-1 0	Turnips, new, per dozen	3 0-4 0
Leeks, per dozen bunches	2 0	in bags—	3 0
Lettuce, English Cabbage, bush.	1 6-2 6	Vegetable Marrows, per dozen	0 6-1 0
English Cos, per score	1 0-2 0	tally	1 6-2 0
Mint, new, p. doz. bunches	1 6-2 0	Watercress, p. doz. bunches	0 4-0 6

REMARKS.—South Australian Oranges are now due. Of Apples there is a large quantity of fallen fruit, owing to the late sales, and the price is about 1s. per bushel. Green Plums 9d. to 1s. per sieve. Cucumbers easier in price.

POTATOES.—90s. to 110s. per ton. John Bath, 32 & 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: August 8.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that to-day's market presented quite a holiday appearance, with an almost complete absence of buyers. The to-lum continues in small supply and meagre demand. New English Rye is now obtainable. There is no alteration in either Mustard or Rapeseed. Peas and Haricots move off slowly on former terms. Canary-seed is strongly held.

FRUIT AND VEGETABLES.

GLASGOW: August 8.—The following are the averages of the prices recorded since our last report:—Gooseberries, English, 24 to 26 per ton; doz., red berries, 1s. to 1s. 3d. per quarter; Cherries, English, 6s. to 8s. per half sieve; Strawberries, Scotch, 3s. to 6s. per dozen pounds; Pears, Angers Williams, 4s. to 5s. per case; Apricots, 3d. to 4d. per pound; Grapes, English, 1s. 3d. to 1s. 6d. per lb.; doz., Guernsey, 10d. to 11d. per lb.; Melons, 24s. 6d. to 28s. per case; doz., 36s. to 40s. 6d. doz.; Greengages, French, 3d. to 5d. per lb.; Bananas, extra, 12s. to 13s. per bunch; No. 1, 9s. to 11s. doz.; No. 2, 7s. 6d. to 9s. doz.; Lemons, Palermo, cases 300, 11s. to 14s.; 360s, 8s. 6d. to 10s.; boxes of 200, 300, and 360, 5s. 6d. to 7s. 6d. doz.; (b) Naples, cases of 42, 10s. to 10s.; 300 and 360, 12s. to 15s. doz.; Tomatoes, Scotch, 6d. to 8d. per lb.; doz., Guernsey, smooth, 3d. to 4d. doz.; doz., French, 2s. to 2s. 6d. doz.

per crate; Cucumbers, 2s. 6d. to 3s. per dozen; Mushrooms, 10d. per lb.; Onions, Valencia, 4s. 3d. to 4s. per case; do., 5s. 4s. 9d. to 5s. 3d.; do.; do.; Malta, baskets, 2s. 9d. to 3s. 3d. per cwt.; Potatoes, Maltese, 9s. per cwt.

LIVERPOOL: *August 8.*—*Wholesale Vegetable Market.*—Potatoes, per cwt.: Early Regents, 3s. 3d. to 3s. 9d.; Kidneys, 4s. 6d. to 5s.; Turnips, 6d. to 8d. per 12 bunches; Swedes, 2s. 6d. to 2s. 9d. per cwt.; Carrots, 6d. to 8d. per 12 bunches; Onions, foreign 3s. 6d. to 4s. per cwt.; Parsley, 4d. to 6d. per dozen bunches; Lettuce, 4d. to 8d. per dozen; Cucumbers, 1s. 3d. to 2s. 6d. do.; Cauliflowers, 8d. to 2s. do.; Cabbages, 6d. to 10d. do.; Peas, 2s. to 3s. 9d. per bushel; Beans, 1s. 3d. to 1s. 6d. do.; do.; Kidney 8d. to 10d. per peck; Scarlet Runners, 8d. to 1s. do. *St. John's*: Potatoes, 1s. 6d. per peck; Grapes, English, 1s. 6d. to 3s. per lb.; do., foreign, 4d. to 6d. do.; Pines, English, 5s. to 7s. each; Apples, 3d. to 8d. per lb.; Tomatoes, 4d. to 8d. per lb.; Currants, white, 6d. per lb.; do., black, 8d. do.; Peas, 1s. 4d. per peck; Cherries, 8d. to 10d. per lb.; Cucumbers, 3d. to 4d. each; Mushrooms, 1s. per lb. *Birkenhead*: Potatoes, 1s. to 1s. 2d. per peck; Peas, 10d. to 1s. do.; Cucumbers, 2d. to 4d. each; Currants, black, 7d. per lb.; do., red, 4d. do.; Cherries, 6d. to 8d. do.; Gooseberries, 2d. to 3d. per lb.; Grapes, English, 1s. 6d. to 2s. per lb.; do., foreign, 6d. to 8d. do.; Mushrooms, 1s. do.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period July 29 to August 4, 1900. Height above sea-level 24 feet.

1900.		DIRECTION OF WIND.		TEMPERATURE OF THE AIR.				RAINFALL.		TEMPERATURE OF THE SOIL AT 9 A.M.			LOWEST TEMPERATURE ON GRASS.
JULY 29 TO AUGUST 4.				At 9 A.M.		Day.	Night.			At 1-foot deep.	At 2-foot deep.	At 4-foot deep.	
				Dry Bulb.	Wet Bulb.									Highest.	Lowest.
SUN. 29	S.W.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.	deg.	deg.	
		65.7	60.5	73.2	57.4	0.09	67.9	66.2	61.2	50.4			
MON. 30	W.N.W.	66.1	57.6	73.4	56.7	...	67.4	65.7	61.3	51.8			
TUES. 31	W.N.W.	68.0	60.5	76.2	54.9	...	66.9	65.4	61.3	45.2			
WED. 1	S.W.	63.0	59.9	67.2	60.8	0.48	67.2	65.2	61.4	56.2			
THU. 2	W.S.W.	63.8	56.9	70.8	53.9	...	64.9	64.6	61.4	49.3			
FRI. 3	S.S.E.	61.8	59.2	68.0	58.2	0.49	65.2	64.2	61.2	56.7			
SAT. 4	W.N.W.	58.4	50.8	64.8	52.3	0.01	62.3	63.8	61.2	50.9			
MEANS...		...		63.8	57.9	70.5	56.3	Tot. 1.07	66.0	65.0	61.3	51.5	

Remarks.—The temperature during the past week has been much lower than that of the previous one, and dull, cold weather is again prevailing. A heavy gale raged for the greater part of the day and night of the 3rd inst.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending August 1, is furnished from the Meteorological Office:—

"The weather during this week was very changeable, falls of rain alternating with intervals of clear or partially clear sky. Thunder-storms were rather general at the commencement of the week, and again at the more northern stations towards its close. The rain was unusually heavy in many parts of Ireland on Thursday night, and over the N. and N.E. of England on Friday night.

"The temperature did not differ much from the mean, but was slightly above it in most of the English districts. The highest of the maxima occurred, as a rule, on July 31, and ranged from 78° in England, S.W., and S., 77° in England E., to 69° in Ireland N., and 67° in Scotland, W. At the close of the week the daily maxima were much lower than those just quoted, and at some of our E. coast stations were below 60°. The lowest of the minima, which were mostly registered towards the end of the period, ranged from 39° in Scotland, N. and E., and 43° in Scotland W., to 51° in England S., and to 53° in the Channel Islands.

"The rainfall was less than the mean, both in Scotland, E., and the Channel Islands, but more in all other districts. The excess was very large over northern and central England, and in the south of Ireland, and very considerable in most other localities.

"The bright sunshine exceeded the mean in all districts, the percentage of the possible duration ranging from 60 in the Channel Islands, and 54 in England, S.W., to 33 in Ireland N., 32 in Scotland, E., and 24 in Scotland, N.

ANSWERS TO CORRESPONDENTS.

AMPELOPSIS: *Constant Reader.* Some of the branches you send have been strangled by twining around one another. Probably the death of a portion of the Vine is due to this cause.

BOOKS: LAURELS.—*Frederick Braund.* There is none that we know of.

CATTLEA AUREA: *T. F.* With regard to your *Cattlea Dowiana aurea* not thriving as formerly, their roots being attacked by the Orchid-fly, necessitating the removal of a large proportion of them, will in some degree account for it. We have seen several instances lately, and especially in *C. Warszewiczii* and *C. aurea* of a similar deterioration from the same cause. Even the removal of the roots does not thoroughly eradicate the pest. The mature insect should be searched for in the evening, and killed when caught. With regard to the best method of treating *C. Dowiana* and others of its section, they always stand a better chance of thriving and flowering well when basketed and suspended near the roof glass. Several of our correspondents who grow *C. aurea* very satisfactorily report that they succeed best by never attempting to rest the plants, but merely restrict the supply of water at the season when active growth does not appear; at that season, giving less water than at other times. When growing they require abundance of rain-water at the roots. We should say that the stove-house in which they were formerly grown would be the most suitable.

CATERPILLAR: *J. Butler.* The Death's Head Moth, *Sphinx atropos*.

CHRYSANTHEMUMS: *R. S. D.* Yes. Burn as many of the affected leaves as you can. Syringe with $\frac{1}{2}$ oz. liver of sulphur to a gallon of water.

CLERODENDRON WITH MOULD: *C. J. E.* The brownish, velvety patches on the underside of the leaf are produced by a "sooty mould," a species of *Fumago*, forms of which are not uncommon on *Clerodendron fallax* and other indoor plants, e.g., Orange, Camellia, and Oleander. A form is troublesome on Hop, and the black crusts so often seen on Oranges are caused by these moulds. The fungus is generally believed to live not on the plant direct, but on honey-like secretions of green-fly, other aphides, and some other insects. You say nothing of insects in your letter. The remedy to use is one against the insect-pest; remove this, and fungus will soon disappear. Some of the best remedies are a wash of soft-soap and paraffin, or resin and soda, or a fumigation with hydrocyanic acid vapour. *W. G. S., Leeds.*

CURRANTS AND GOOSEBERRIES: *W. Horton.* It is quite true that a provisional pruning of the bushes is now practiced by some gardeners; but it is questionable in a general way if any benefits are derived from the practice, and it is certainly an addition to the gardener's labours. To summer prune is desirable, however, in the case of cordon and wall Currants and Gooseberries, in order to save the shoots from destruction by wind and rain, which might tear them off the main branches. The summer pruning consists of shortening the stronger shoots to half their length, severely spurping in the weak ones, or removing them entirely from the centre of the head. The shortened shoots are cut still further back in the winter, or where tomtits and bullfinches are troublesome, in the spring.

FORCING SUCKERS TO GROW FROM THE ROOTS OF FRUIT-TREES: *B.* In the case of grafted and budded trees there is usually no difficulty in getting suckers to grow, but rather in preventing their growth and removing them. Laying bare the roots nearest the surface, and cutting deep notches in them a few inches apart, or heading back the trees, might have the desired effect. In the case of trees having diseased bark, it would not be prudent to run up any shoot as a future stem if it emerge from the latter.

GOLDEN HORNERADISH: *A. B.* A remarkable specimen. If all the leaves are as destitute of green matter as these, we should doubt if it can be propagated; but we should certainly try, as your plant has behaved in this way two years running. If it can be perpetuated it would be very ornamental for bedding.

GROS MAROC AND ALICANTE: *J. L. R.* The first-named is much the better Grape in quality, and is fine in appearance and the Vine moderately fruitful; a mid-season Grape. Alicante, on the contrary, is of third-rate quality, and a late Grape, fruiting freely and colouring well, and the Vine a good grower. The bunches have a good appearance, and weigh from 2 to 6 lb.

ILLEGITIMATE COMMISSIONS: *X.* We fully sympathise with your remarks, and at one time we thought that a determined line of action by the nurserymen and seedsmen as a body would stop the iniquity. But if we could abate, if not entirely stop this unknown percentage, we could not prevent our Dutch and Belgian friends from doing the "same thing, only worse!" A circular now before us from a Dutch house, which would not like to be thought disreputable, shows us what we might expect when we cleansed our own stables. The matter is surrounded with difficulty.

MELON STEM DECAYING: *J. M. B., Banbury.* The symptoms point to a fungus, probably a *Cercospora* such as that described by Dr. Cooke in the *Gardeners' Chronicle*, in 1896, vol. xx., p. 271. The great heat had caused the piece of stem sent to decay entirely. If you have similar instances of fungus infestation, you should employ flowers-of-sulphur in fine powder, or sulphide of potassium, $\frac{1}{2}$ oz. in a gallon of water.

NAMES OF FRUITS: *Edgar.* Mr. Gladstone.—*W. H. Scott.* Pear: Petit Muscat.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*T. A., Godalming.* 1, *Euphorbia jacquiniæflora*; 2, *Rhus Cotinus*; 3, *Codiaeum*, we cannot name varieties.—*J. F. B.* 1, *Solidago elongata*; 2, *Aster sibiricus*.—*A. C. B.* 1, *Pinus laricio* var. *austriaca*; 2, *Larix*, probably *sibirica*; 3, one of the Larches; we cannot tell which without the cones; 4, *Larix Griffithii*; 5, *Juniperus excelsa* var. *stricta*; 6, *Castanea chrysophylla*; 7, *Athrotaxis laxifolia* (see *Gardeners' Chronicle*, Nov. 7, 1885).—*No name, cylindrical card-board box.* *Gomphocarpus fruticosus.*—*Justus Corderoy.* *Hypericum hircinum*, *Campanula rapunculoides*, *Salvia splendens*, variety.—*H. T.* *Dendrobium Dalhousieanum*.—*H. P.* *Oxalis acetosella*.—*J. S.* 1, *Pavia macrostachya*; 2, *Viburnum lantana*; 3, *Virgilia lutea*.

PEACHES: *W. S.* Peach-mildew. Destroy all affected fruits forthwith, and dust the entire tree with flowers-of-sulphur.

ROYAL HORTICULTURAL SOCIETY: *C. Edwards, Abergavenny.* The next meeting will be held on Tuesday, August 14, at the Drill Hall of the London Scottish Volunteers, James Street, Victoria Street, Westminster. The price of admission for non-Fellows is 1s. No guide-book is necessary, but any information you may desire may be obtained at the Society's Office, 117, Victoria Street, close by.

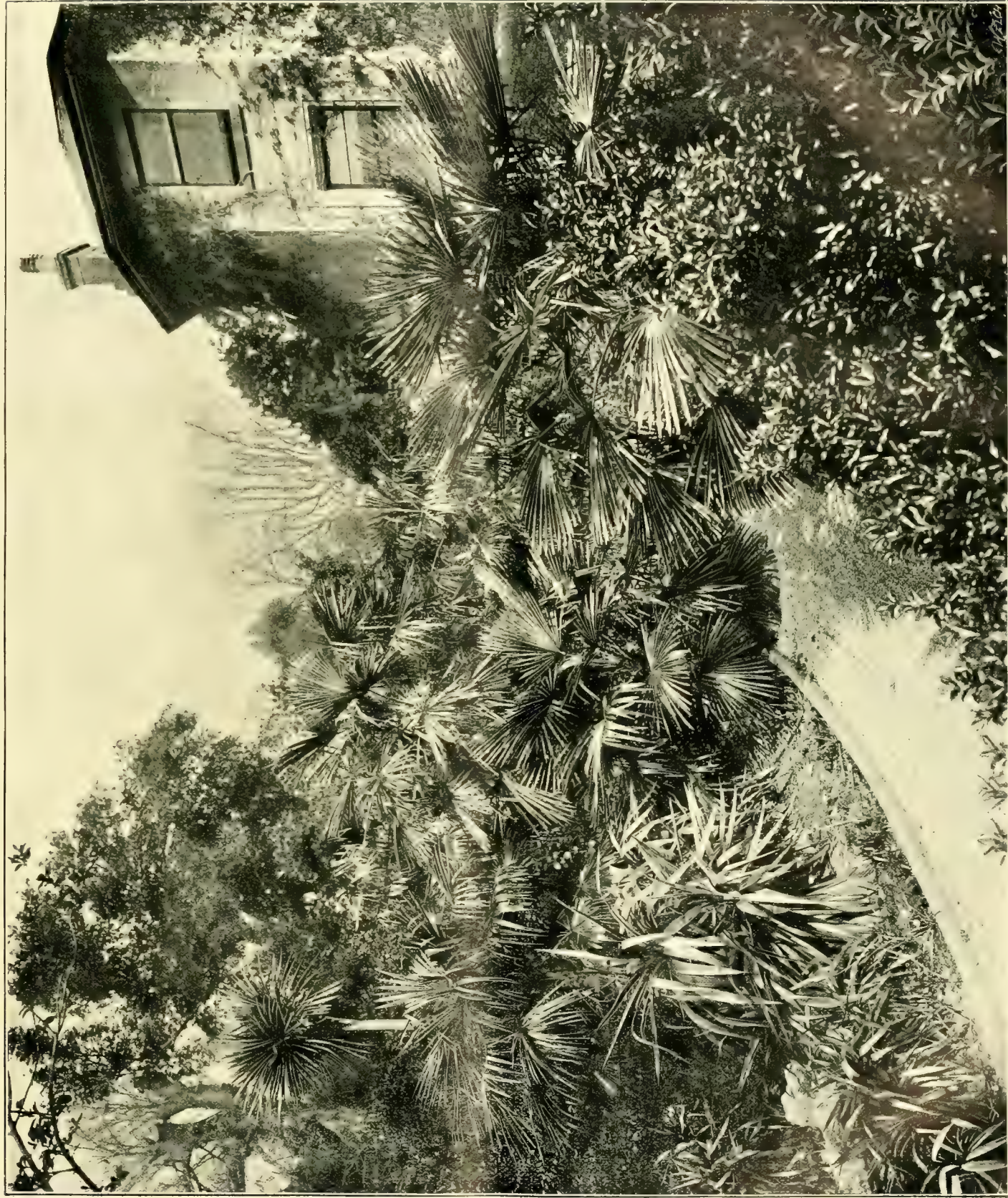
SIX KINDS OF VEGETABLES FOR EXHIBITION: *J. L. R.* Late summer and early autumn vegetables might include: (1) Peas, French Beans, Cauliflowers, Potatoes (round and kidney), Cabbages; (2) Turnips, Onions, Scarlet-runner Beans, Beetroot, Potatoes, and Cabbages. This being perhaps the better cottager's choice of kinds.

SPLITTING OF MELONS: *W. B.* Caused by a large quantity of water being applied to the soil after being kept on the dry side for a time. The sudden accretion of sap causes the fruit to increase in size more quickly than the rind and outer layers of flesh. The obvious remedy is to maintain the Melon-bed regularly moist, erring, if at all, on the side of dryness.

WHITE FLY ON TOMATO PLANTS: *Reynolds.* Vapour of "XL-All" will effect their destruction.

COMMUNICATIONS RECEIVED.—*S. A.* Weeks, too late for insertion.—*W. Plester*.—*J. Dunn*.—*S. S.*—*D. R. W.*.—*R. D. S. J.*—*K. C.*—*S. W. F.*.—*D. T. F.*.—*W. G. S.*.—*J. P.*.—*J. B.*.—*H. K.*.—*J. E.*.—*A. B.*.—*McD.*.—*A. C. F.*.—*W. R.*.—*J. J.*.—*W. C.*.—*W. M.*.—*W. W.*.—*J. Deacon*.—*M. Cuthbertson*.—*W. C. P.*.—*W. W.*.—*J. A. L.*.—*W. S.*.—*W. G. S.*.—*W. G. S.*, Leeds.—*R. H. P.*

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PALMS IN DR. HAMILTON RAMSAY'S GARDEN, DUNCAN HOUSE, TORQUAY.



THE

Gardeners' Chronicle

No. 712.—SATURDAY, AUG. 18, 1900.

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FLOWERS IN THE SOUTH-WEST.

THE sunshine and warmth of July came as a welcome change after the heavy rains of spring and early summer, and rarely have gardens and the country-side presented a fresher appearance at this period of the year than during the past month, while in the absence of wind and rain the frailest petals remained undamaged. In July, gardens are so replete with flowering subjects, that only some of the more notable, either for their decorative qualities or for their limited culture, can be alluded to.

One of the noblest plants in the garden at the end of July is *Acanthus mollis latifolius*, if afforded a deep root-run, and allowed to assume its rightful proportions, when it often throws up its lofty flower-rods to a height of 8 feet. The herbaceous border is, naturally, no place for this giant, but in the wild garden, or in the forefront of a shrubbery-border, it produces a striking effect. Both the blue and white forms of *Agapanthus umbellatus* do well when planted out in the open in many gardens, large clumps, bearing numerous flower-heads, growing on sloping lawns, forming a most attractive feature.

The *Alstroemerias* retained their beauty throughout the first half of the month, and, in a moist spot, *Anemone rivularis*, given as an

April bloomer in a certain dictionary of horticulture, bore its starry, white flowers; and *Arnebia echioides*, also known as the Prophet Flower, produced its bright yellow blossoms, which on their first expansion are marked in the interior with blotches of maroon-purple, that disappear after a couple of days. In the background of wide herbaceous borders, *Bocconia cordata* has reared its stately heads of ivory-white and burnt-umber inflorescence to a height of 8 feet or more above its grey-green, deeply-cut leafage, with its silvery reverse. *Brodiaea californica* and *B. laxa* have also flowered; *Calandrinia umbellata* has borne its rose-crimson heads of bloom, and *Callirhoe involucrata* and *C. papaver*, their blossoms of crimson and purple-red; while the *Calochorti* or *Mariposa* Lilies of the venustus section have produced their marvellously beautiful flowers of cream-white, blotched and pencilled with deep maroon and yellow, and of immense size in comparison with the diminutive proportions of the bulb. Even under the most favourable conditions, however, these lovely plants appear difficult to establish permanently in the open, renewals being generally necessary from time to time if the display is not to wane. One of the most brilliant effects of the month has been provided by giant bushes of yellow *Calceolaria*, many of them 5 feet in height and over 6 feet in breadth, which have been simple masses of gold. These plants are to be found in many cottage gardens, where they have remained unharmed for years. In the plot in front of a little farm-house, a line of these great bushes in full flower, backed by the tall, blue flower-spikes of *Delphiniums*, produced a gorgeous colour contrast.

Many of the June-flowering herbaceous *Campanulas* continued to blossom through July, their dwindling ranks being reinforced towards the end of the month by the tall flower-spikes of the Chimney *Campanula* (*C. pyramidalis*) in its tints of purple, white, and lavender. The pretty *C. Van Houttei* has also been in bloom, as have many of the dwarfier forms, such as *C. carpatia* and its varieties *turbinata*, *t. alba*, and *pulviformis*, as well as *C. Raineri*, *C. Waldsteiniana*, *C. G. F. Wilson*, and *C. pulloides*, the latter raised by Mr. Archer-Hind, and being distinctly superior to *G. F. Wilson* both as regards size of flowers and depth of colour.

Carnations have been good in many gardens, in light soil in steeply sloping beds, as well as in heavier staple. Duchess of York, Mephisto, Raby Castle, Mrs. Reynolds Hole, Gloire de Nancy, and others are masses of bloom, and in one garden the old Crimson Clove and *Germania* have flowered profusely. *Chelone barbata*, or *Pentstemon barbatus*, has borne its 3-foot-high flower-spikes, thinly set with drooping, tubular blossoms of orange-scarlet *Cimicifuga racemosa*, a handsome plant in the wild garden, has developed its long, feathery spires of white blossom; and the pretty little *Cypella Herberti* has borne its apricot-yellow, *Tigridia*-like flowers. These only last in beauty for one day, but are produced in such quick succession that the plant remains in bloom for a month or more.

The bulbs have been in the open ground unprotected for five years now, and remain in good health. *Desmodium penduliflorum*, syn. *Lespedeza bicolor*, has expanded its purple blossoms; and the Burning Bush (*Dictamnus Fraxinella*) has flowered freely. The white variety is far preferable to the type, and forms a bushy specimen if allowed to remain undis-

turbed for a few years; it is, however, less hardy than the common form.

The Globe Thistle (*Echinops Ritro*), with its globular, silvery-blue flower-heads, is an interesting plant; and the Sea Hollies are very ornamental when their metallic-blue bracts are perfected. Of these, the best are *Eryngium amethystinum*, a plant that is rare in gardens; *E. Oliverianum*, being very generally substituted for it, the last-named species and *E. Bourgati*, *Erigeron speciosus*, and its form *grandiflorus*, are clouds of lavender, golden-centred, star-flowers. This plant is especially valuable for its persistent blooming, often commencing in the south-west in mid-June, and not being flowerless until October or November. The little Mexican Daisy (*E. mucronatus*) enjoys an even longer season of bloom, sometimes being in flower for nine months out of the twelve; it propagates itself readily from self-sown seed, and walls may often be seen the faces of which are liberally furnished with flowering plants, the product of seed that has lodged in the interstices of the stones. *Epipactis palustris*, formerly known as *Serapias*, an Orchis sometimes found in England, has been in flower in a damp spot.

The Funkias are now at their best. *Funkia Sieboldi* bears the palm for decorative effect; its large, glaucous foliage being especially valuable in association with sub-tropical subjects. *F. grandiflora*, with its large-belled flower-spikes, and the purple-flowered *F. coerulea*, owe their attractions more to their blossoms than their leafage, though the latter is distinct in contour. *Gaura Lindheimeri* is a plant rarely met with in gardens; it is a perennial, and grows to a height of 4 feet, being a handsome object in July, when its shoots are smothered in white, rose-tinted flowers. *Gentiana asclepiadea*, growing in clumps 2 feet in height, is in profuse bloom; and in the same garden *Geranium sanguineum album* has been a sheet of white. I lately saw *Gerbera Jamesoni* in flower in a sheltered nook, its dazzling orange-scarlet blossoms rendering it a particularly attractive sight; in some gardens, however, the plants, though apparently healthy, show no signs of flowering. *Gypsophila paniculata* is, happily, common to most gardens in the present day, and few plants better deserve appreciation. Hollyhocks are especially vigorous, and show but little sign of the disease that at one time threatened to exterminate them.

The single Fig-leaved Hollyhock (*Althæa ficifolia*), with its deeply-cut foliage and pale yellow flowers, is an attractive species. Many of the St. John's-worts are in flower, amongst these being *Hypericum Moserianum*, *H. olympicum*, *H. oblongifolium* (a large bush, 8 feet high), and *H. patulum*. *Incarvillea Delavayi* carried its flowers well into July, and *Jaborosa integrifolia* produced quantities of fragrant white blossoms in a sunny wall-border.

Of Lilies, *L. candidum* has, in most instances, flowered superbly, and has, on the whole, been freer from disease than for some years past; *L. croceum*, *L. excelsum*, *L. Humboldtii*, *L. giganteum*, and the swamp Lilies, *L. canadense*, *L. superbum*, and *L. pardalinum*, have also bloomed well where conditions of soil and situation have been favourable; and towards the end of the month the brightest of all Lilies, the scarlet Turk's-cap (*L. chalcedonicum*), opened its vermilion blossoms. *Lindelia spectabilis* has borne its clusters of purple-blue flowers; and *Linum flavum* and *L. narbonne* have provided their respective tints of clear yellow and soft blue. The green-leaved *Lobelia*

cardinalis was in full bloom in mid-July. This plant is often confounded with *L. fulgens*, but it is about a month earlier in flowering, and its leaves are much rougher in texture than those of the dark-leaved and green-leaved forms of *L. fulgens*, the surface of which is smooth. *Malva lateritia* is one of the loveliest flowers in the garden, the faint salmon-pink of the satin petals being set off by the inner markings of carmine.

The Night-scented Stock (*Matthiola bicornis*) has no claim to favour on account of beauty, but the delicious fragrance that it spreads afar in the twilight hours more than atones for its somewhat dingy appearance; in spite of its exquisite perfume it is grown in few gardens. The old-fashioned Bergamot or Bee Balm (*Monarda didyma*) has a handsome effect when planted in masses, the deep crimson flowers creating a pleasing breadth of colour. *Ostrowskia magnifica* has flowered finely in many gardens, the blossoms in some cases being 6 inches in diameter; while one plant of the white variety, which is a great improvement upon the type in colour, attained a height of 6 feet 3 inches. *Platycodon grandiflorum*, *P. g. album* and *P. Mariesii* have been in bloom, and *Phygellus capensis* has borne its pendent, scarlet blossoms on its tall flower-stems. *Romneya Coulteri* has proved the cynosure of all eyes where it is in vigorous health and flowering freely. Nothing more exquisite can be imagined than the great snow-white single flowers, sometimes 6 inches across, with their crêpe-like petals surrounding the central boss of golden stamens, while their charm is heightened by their sweet scent. Although many examples in the south-west are pictures of health and floriferousness, others have died from some unassignable cause, soil and climatic conditions being, in certain cases, precisely similar where success and failure have ensued.

Rosa moschata nivea is a lovely climbing Rose, another good one being the single white Macartney, which commences to bloom at the end of June, and continues uninterruptedly until October or November. It is well nigh impossible with the ever-increasing list of Roses, Hybrid Perpetuals, Teas, and Chinas to single out any special Rose for encomium, but few can excel the charms possessed by Irene Watts, an offspring of the beautiful Laurette Messimy, whose blooms reveal a subtle blending of subdued tints ranging from a suspicion of scarlet, through orange and apricot to faintest saffron and shell-pink. *Sparaxis pulcherrima*, the very embodiment of grace, has been exceedingly beautiful, the long, slender flower-stalks, about 6 feet in length, tapering as they rise until at the extremities they are scarcely thicker than horse-hair, and gently arching, so that the blooms droop, pendent, from the curved stem. The type has rose-coloured flowers, but there is a form with white blossoms which is even more desirable.

Tigridias of the various hues now in commerce, are providing a display of glowing colour, and rival any denizen of the hot-house in their sumptuous splendour. In the rock-garden, amongst others, the following plants have been in bloom: *Acena microphylla*, *Antirrhinum glutinosum*, *A. Asarina*, *Dianthus Atkinsoni*—a brilliant crimson, and the Fringed Pink (*D. superbus*), *Genista sagittalis*, *G. schipkensis*, *Gentiana cruciata*, *G. septemfida*, *Linaria repens alba*, *Modiola geranioides*, with bright red flowers, *Scutellaria alpina*, and *Tunica saxifraga*. In climbing plants, the varied forms of large-flowered Clematis have been conspicuous,

and *Tropæolum speciosum*, in the few gardens in which it is thoroughly at home in the south-west, has spread its scarlet flower-trails over evergreen and wall. *Physianthus albens* is in full bloom, and the Ivy-leaved Pelargonium Madame Crousse has veiled walls of cottage and house, with soft, salmon-pink blossom—in one case a space over 20 feet in height has been covered; while *Solanum jasminoides* becomes whiter with each succeeding week as additional flower-clusters expand. Early in July I saw a Turkey Oak whose trunk, to a height of 40 feet, was entirely enveloped by *Hydrangea scandens*, which had been planted ten years previously.

SHRUBS IN BLOOM IN THE SOUTH-WEST.

Abutilon vexillarium has its arching shoots thickly studded with crimson, yellow-centred flowers, and will continue to bloom until cut by the frosts. At the commencement of the month, trees of *Cornus* (*Benthamia*) *fragifera* were sheets of pale yellow blossom. The Allspice (*Calycanthus*) has now perfected its blooms; and a fine specimen of *Callistemon salignus*, some 15 feet in height, has been loaded with its yellow, bottle-brush-like flowers. *Carpenteria californica* bloomed well into July, and *Ceanothus Gloire de Versailles* was a cloud of pale blue through the greater portion of the month; while the Holly-like *Desfontainea spinosa* was a brilliant sight, with its long, scarlet, orange-tipped flowers. *Fabiana imbricata*, which is generally taken for a Heath, has been a mass of bloom; fine specimens, 7 feet and more in height, such as are not uncommon in the south-west, being handsome objects; as are the *Habrothamnus* and *Indigofera Gerardiana*, both of which are now in flower in the open. *Metrosideros robustus* has produced an abundance of vivid crimson bloom-clusters, in shape precisely similar to those of the *Callistemon* above alluded to; and in a sheltered corner an Oleander has expanded its blossoms.

Ozothamnus rosmarinifolius has been smothered in a profusion of its minute, white flowers, scarcely a vestige of foliage being discernible; and *Piptanthus nepalensis* has produced its racemes of yellow, Laburnum-like flowers. The Venetian Sumach (*Rhus Cotinus*) is already a billowy mass of feathery panicles that will gain in colour as the season advances. *Trachelospermum jasminoides* is comparatively common as an outdoor wall plant, and large breadths are now covered with its fragrant, white blossoms. Of shrubby Spiræas, *S. flagelliformis*, *S. ariæfolia*, *S. Lindleyana*, and *S. Bumalda*, and Anthony Waterer, have been in bloom, but these succeed equally well in colder localities than the south-west. *Swainsonia albiflora* is in flower in the open at the present time. *S. W. F.*

FUCHSIAS AS PYRAMIDS.

THE Fuchsia is one of the most useful plants for conservatory decoration and the embellishment of the flower garden. In a previous note I drew attention to the usefulness of Fuchsias in open-air bedding, giving a list of varieties. Some few years ago the favourite form of training Fuchsias was the pyramid—a form seldom observed at the present day; yet I think that there is no better form for bringing out the beauties of the plant, as it is the most natural, excepting the plant be employed to drape a pillar or a rafter. In the nursery of the Messrs. Veitch, at Chelsea, excellent examples are to be seen trained to the rafters of a span-house [figured in the *Gardeners' Chronicle*, February 18, 1893. ED.], and in few private gardens this mode of training these plants is adopted with pretty effect.

When the plant is trained as a pyramid, the cuttings should be struck in the present month, and the young plants grown on gently throughout the winter, a good foundation being thus laid for the plant starting quickly in the early spring. An important point is to get the cuttings rooted quickly, which is not difficult if vigorous shoots are

selected as cuttings, and they are placed in a moist, warm propagating-pit or garden-frame. Unchecked growth from first to last is the secret of success, although the plant must not be unduly pushed along before the days lengthen. A compost consisting of equal parts of sound loam, leaf-mould, and decayed cow or horse-dung, with sharp sand in sufficient quantity to make the whole porous, and a small quantity of peat. The soil with which the cutting-pots are filled may consist of the same compost finely sifted, but afterwards the soil may be used in a more lumpy state. When growth becomes more active after the new-year shift, let the plant be shifted from 60's into 32's, and be stood in a house having a temperature of 60° to 70°, the air being kept moist in the usual manner. A slight amount of shade should be afforded the plants during bright sunshine. When the roots permeate every part of the soil, and no further repotting is going to be done, liquid-manure may be frequently afforded, and sometimes as a change a sprinkling of Clay's Fertiliser. From the commencement the leader should be secured to a stake as it extends, and never have the point pinched out, but all laterals should be stopped as they proceed, so as to ensure uniformity of growth.

After flowering is past, the one-year-old plants should be well ripened as regards the shoots, the amount of bloom the second year depending upon this taking place; they should therefore be placed in a sunny position in the open air, removing them to shelter on the approach of frost. A fairly dry cellar, or the ground beneath the stage, are also good places in which to store them, taking care that they do not become too dry at the root, the greenhouse floor being the better place. Just sufficient water may be afforded to prevent shrivelling of the wood. When growth begins anew, let the plants be shaken out of most of the exhausted soil, and repotted, pruning the shoots to plump buds. Having potted and pruned the plants, stand them in an intermediate-house, and repeat the cultural methods pursued with yearling plants.

I append a list of varieties that may be depended upon, and the flowers of which are of various colours, viz., Rose of Castile, Lucy Mills, Madame Jules Chretien, Lye's Queen, Avalanche, Beauty of Trowbridge, Improvement, Wave of Life, Venus Victrix, Lye's Excelsior, Mrs. Marshall, and Gazelle.

Plants of two years' growth should attain to a height of 7 or 8 feet, and after the third or fourth year they should be thrown away, or used for out-of-door purposes. Should the plants be required to flower at a given date, eight weeks should be allowed, and pinching out the points of the shoots should cease, merely the forwardmost flower-buds being removed as they appear. *H. T. M., Stoneleigh.*

[In the warmer parts of the country the flowering of the Fuchsia may be retarded for several weeks by placing the plants on the north side of a high wall. ED.]

ROSES AT BIRMINGHAM.

RECOLLECTING the great success of the National Society's Show in 1890, and knowing the great increase that had taken place in the number of our exhibitors and members, it was naturally to be expected that the exhibition of the present year should far exceed the former one. But there is one element that we always have to reckon with, and over which the best possible arrangements can have no control, but which has materially interfered with the Society's exhibitions this year—I mean the weather. The Southern Show at Salisbury was interfered with by the cold and ungenial weather in the early part of the season. That at Birmingham was held in tropical weather, such as was enough to destroy the beauty of Roses anywhere. Being held in a low-pitched glass building, although carefully shaded, the freshness of the Roses was soon destroyed; and anyone who went to see the Roses at 3 o'clock in the afternoon, must have been woefully disappointed—and yet there

were some features in it that deserve special notice. It is well known that this so-styled Northern exhibition was intended mainly to suit northern growers, and it is satisfactory to find that several of them came well to the front. The Amateurs' Challenge Trophy was again carried off by Mr. E. B. Lindsell, who seems to have a lien upon it, no matter where the show is held; but the 2nd prize in the trophy class was gained by Mr. Conway

man is very remarkable and praiseworthy. He began as a very small grower, and has gradually worked his way up, so that not only did he occupy the enviable position of being 2nd for the Trophy, but he also obtained the 1st prize in all the classes in which he could exhibit, showing Teas equally well with Hybrid Perpetuals and Hybrid Teas. It was to be expected that Messrs. Harkness & Sons would come out strongly in their nurseries at Bedale; they

Another exhibitor than whom there does not exist a more enthusiastic rosarian, is Mr. William Boyes of Derby. The Society owes him a great debt for the trouble he took with the Derby Show, and I am sure all will be glad to see he has been so successful on this occasion. At an exhibition like this, when the general character of the blooms was below the mark, it was pleasant to see how well the Tea Roses came out of the ordeal of heat, which they stand so much better than high coloured Roses, for their tints are not so much affected by it. Mr. Prince, of Oxford, well maintained his high position among nurserymen, while Mr. Conway Jones again took up the leading position amongst amateurs.

Of course, many of those who had exhibited in the earlier shows of the Society, were out of the running; and yet it is a somewhat curious comment on the fickle character of exhibitions, that that well known exhibitor, Mr. A. Slaughter, of Steyning, in Sussex, exhibited here far better than he did at the earlier shows of the Society. The flowers which obtained the medals of the Society are, of course, eagerly sought after (by-the-by, they are medals, and not trophies, as stated by some). A Gold Medal was awarded to Messrs. A. Dickson & Sons for their new soft cream-coloured Rose, Duchess of Portland; this Rose has very much the character of Kaiserin Augusta Victoria, but is deeper in colour than that flower, and with wider and rounder petals, which do not curl as that sometimes does, and so become rough. The flowers which obtained the Silver Medals in the amateurs' division were Bessie Brown (H.T.), shown in excellent form by Mr. W. Boyes, of Derby, who also obtained the similar award for the best H.P. Horace Vernet and Comtesse de Nadaillac, a beautifully-coloured flower, exhibited by Mr. Moules, of Hitchin. In the nurserymen's division, the medals were won by Messrs. A. Dickson & Sons, with Horace Vernet (H.P.), a well-coloured bloom, and Mildred Grant (H.T.), a flower of their own raising; and Mr. G. Prince, of Oxford, had the best Tea Rose, in a grand bloom of white Maman Cochet.

The garden Roses were again a great feature, and were shown in a separate tent, where they attracted much admiration. Mr. H. V. Machin, of Gateford Hill, Worksop, had a grand collection, tastefully arranged, amongst them were Crimson Rambler, Macrantha, Bardon Job, Bennett's Seedling, Paul's Single White, Madame Pernet Ducher, Madame Pavie, Madame Falcot, Wm. A. Richardson, White Pet, Madame Chedane Guinoisseau, and Crested Moss. In the nurserymen's division the principal prizes were taken by Mr. Mattock, of Headington, near Oxford; Messrs. Cooling & Sons, of Bath; and Messrs. F. Cant & Co. It is always difficult and trying in such weather to meet all the requirements of the exhibitors, but the combined efforts of Mr. Wallis, Professor Hillhouse, and Mr. Lathom, made everything go off smoothly, and the exhibitors felt deeply grateful for the attention that was paid to them, and the hope was strongly expressed that another ten years would not pass before the National appeared again in Birmingham. *Wild Rose.*

GRAFTING.

A CORRESPONDENT obligingly sends us a specimen which exemplifies some of the mysteries of grafting, or rather of budding. The stock employed was the ordinary English Elm; the scion was the Cornish Elm. The bud marked B in the accompanying drawing (fig. 32) did not take, but apparently died. That it did not really do so is seen by the fact that two shoots of the Cornish Elm, CH E, pushed from the top of the shield of the scion (of these only one is shown), and one from the base, whilst from between them sprang a shoot of the common Elm, CE.

It would seem, then, that the central bud died, but that the margins of the shield retained their vitality, and produced Cornish shoots, CH E, after their kind. Whence, then, came the shoot CE? Is the shoot CE to be considered as a reversion?

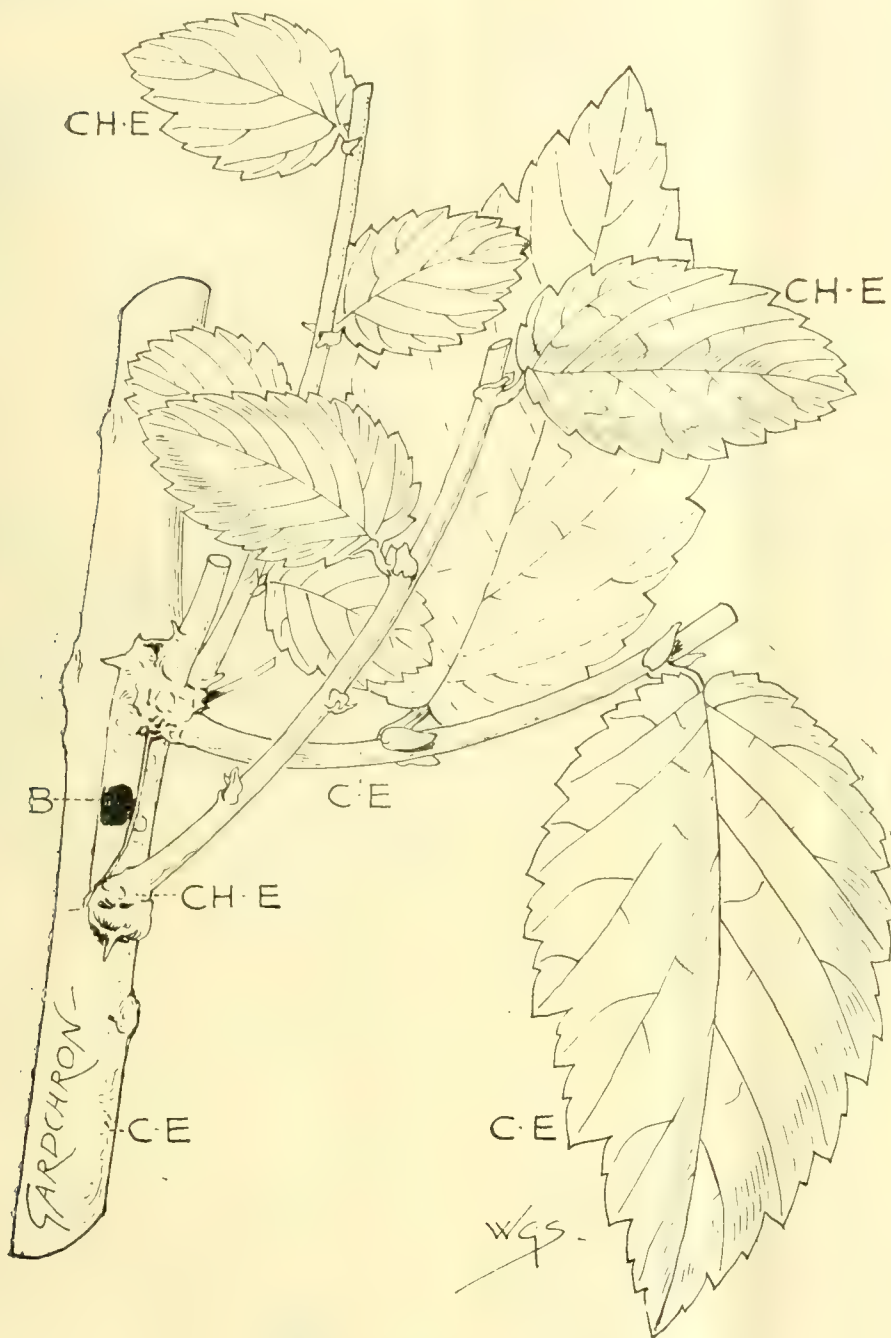


FIG. 32.—COMMON AND CORNISH ELM.

Jones, of Gloucester, who was only two points behind his successful competitor, and yet he grows under 2,000 plants, and he obtained the 1st prize for growers of that number.

I see that it is mooted by a correspondent in your columns that some alteration ought to take place in this class, so as to give those who grow a smaller number a chance of obtaining the Trophy. It is possible, of course, that had Mr. Conway Jones had to contribute a smaller number he might have been able to gain the additional points required for winning. The success of this gentle-

obtained the Jubilee Trophy, although they were run very close by Messrs. Alex. Dickson & Sons, who, however, vanquished them in the classes for seventy-two and thirty-six trebles; besides obtaining first in a dozen blooms of new Roses, in which many flowers of their own raising figured, and 1st for twelve blooms of any pink or rose-coloured Rose. In the stand for twelve new Roses, the following were Mr. Dickson's own raising: Bessie Brown, Florence Pemberton, G. H. Mackereth, Ulster, Alice Grahame, Liberty, Mrs. Edward Mawley, and Duchess of Portland.

VERNONIA SCORPIOIDES.

(SEE FIG. 33.)

A GREENHOUSE or stove under-shrub, long since introduced, but rarely seen. It is of tufted habit, 10 inches to 2 feet in height, with ovate leaves, and small heads of violet-coloured flowers in cymose panicles. It is a native of Brazil, and was exhibited in the spring of this year by Mr. Bennett-Poe as a decorative plant; pinched in to form a compact habit, it would be very useful.

FORESTRY.

AVENUES.

THERE are few nobler sights than a complete avenue of tall, well-shaped timber, leading up to some picturesque old mansion or castle. What constitutes an avenue is not altogether

In many instances these avenues or vistas radiated from the mansion in every possible direction, and the idea to which they owed their origin was quite distinct from that associated with the more modern type. With the introduction of the natural style of gardening, the planting of these avenues was discontinued, and in many cases those already formed were partially destroyed or broken into. One of the sins laid at the door of "capability Brown" by his opponents was the breaking up and destruction of many fine old avenues, owing to their not conforming to his ideas of natural scenery. As a matter of fact, avenues can never be anything but of an artificial character, but this is rather a feature than a fault, and they are certainly not more artificial than circular clumps dotted about at regular distances. Perhaps many of them were not wanted, but considering the great length of time required to bring them to maturity, more consideration is needed for removing than planting one,

the perfect balance of the various parts which make up the scene. The centre consists of the mansion, entrance-gates, or whatever it may be, and the setting of two converging lines brought to a focus at the back of the objective. If by any means one of these lines is thinner, shorter, or less regular than the other, the difference can be detected, and we at once feel that a defect exists, which mars to a greater or less extent the scene before us. It will be thinner or shorter when the trees on one side are younger than those on the other, and its regularity will be in a great measure impaired when the trees on either side are of different heights and ages. The longer the avenue the less will this latter defect be observable, for distance reduces the relative differences in the height and sizes of the bases.

So far, we have considered the avenue from a perspective point of view, its appearance from which determines in a great measure its success or



FIG. 33.—VERNONIA SCORPIOIDES.

clear, as the term is often applied to a straight drive through a wood, or belt of trees, in such cases being completely arched over by the branches. In other instances, we find a grass margin between the trees and the drive, but without the timber being formally planted in lines. But the more usual form, and the one we shall deal with here, consists of one or more rows of trees planted in rows parallel to the road or drive which lies between them, and which more or less shut it and the grass margins in, or separate them from the ground on either side. The chief feature about such an avenue is that it should lead from one definite point to another, although it must be admitted one of these points is often missing, and we sometimes find avenues losing themselves in the middle of a park, without any very apparent reason.

Repton thought that the avenue first originated in the shape of a glade cut through the surrounding forest for the sake of a better current of air. The more modern type probably was planted during the seventeenth century, when the geometric style of landscape-gardening was the universal fashion.

unless it has become an absolute eyesore from disease or bad health.

The beauty of an avenue lies, in our opinion, in its symmetry, and the idea it conveys of uniformity throughout its length. Like all other formal styles of planting, it can only be termed a success in its entirety, and not when it consists of disjointed sections, or abrupt interruptions.

An avenue, strictly speaking, is a piece of vegetable architecture, associated with the objective to which it leads, whether mansion, entrance-gates, or anything else, and it is quite as great an evil to have the former patchy and irregular as it would be to have the latter in a dilapidated condition. Perhaps many may think this is going rather too far; but it must be remembered that an avenue is very much the same in a landscape as the setting of a picture on canvas. When we enter the end of an avenue, the eye at once rests upon the further point, and the impression we receive is much about the same, whether we gaze upon it for a minute or an hour. Whether that impression is pleasing or not depends in a great measure upon

failure to please. But when walking or riding between an avenue its face or inner surface of stem and foliage also comes under observation. This is quite as important as the other, for being brought into close proximity to the eye, any defects are more easily observed. Here, again, a certain amount of uniformity is looked for, and this is produced more by the density of the lower branches than by the actual height of the trees, that is, at least after they have reached a height of 20 feet, and are well above the level of the observer's eye. With some species, such as those which retain their lower branches to the last, Lime, Chestnut, Beech, &c., this condition is more easily obtained, than with light-demanders like the Elm and some of the Conifers, although the latter are not often used unless able to fulfil this condition. For the first 100 years or so in their life, little trouble is experienced in this connection, but when gaps begin to occur through wind or decay, the real trouble begins, for which no satisfactory remedy has yet been found. A. C. Forbes.

(To be continued.)

MARKET GARDENING.

FIELD TOMATOS.

FIELD Tomatos are looking remarkably well, and should the fine weather now prevailing continue, the crop will prove a satisfactory one in every respect, the clusters consisting of from five to nine large well-shaped fruits. The change from wet to sunny weather has taken place at the critical moment, as some of the fruits evince a disposition to crack near the stems. For some reason or other the supply of Tomatos now and during the last fortnight is inadequate to the demand, with the natural result of better prices being secured. And these satisfactory prices, owing to the fact of the crops of fruit of several noted growers of Tomatos under glass, each of whom usually send tons of fruit daily to Covent Garden during the summer and early autumn months, being completely exhausted, are likely to obtain for out-door fruit.

In order to give the clusters of fruit the full benefit of light and sunshine, all suckers and lateral growths should be persistently pinched, and the large compound leaves should also be cut back to two leaflets, the individual plants being kept in position on the wires stretched along each row of plants for their support; the effect of the recent wind-storms caused a good deal of attention to be given in this direction.

WINTER AND SPRING TURNIPS.

Good breadths of such varieties of the Turnip as Early Green Stone, Jersey Lily, and Manchester Market (mixed), should be sown forthwith for yielding supplies of this wholesome vegetable during the winter and early spring months. The Turnip prefers a fairly light soil, into which a good dressing of farmyard or staple manure had been ploughed for the previous crop. The ground having been ploughed, harrowed, and rolled, if lumpy, should have a surface-dressing of soot to ensure clean roots being secured. The application of soot stimulates root-growth, and preserves them from the attacks of the wireworm and other creatures which prey upon underground-growth. The seed may be drilled-in, or sown broadcast. In the latter case, harrowing and rolling, to cover and compress the seed and soil, are requisite.

CABBAGES FOR SPRING USE.

A good supply of sturdy, free growing plants of the Ellam's Early and Enfield Market type of Cabbage should be in readiness for planting in well-prepared enriched land, the middle of next month (September), so as to have good saleable heads in April and May next, when a good price may be realised. Ellam's Early may be planted in rows about 16 inches asunder, and at the same distance from plant to plant in the rows, giving the larger growing varieties a few inches more space every way. If the roots of the plants are dipped in a "puddle" made to the consistency of thick paint, and into which a few handfuls of soot have been stirred, before being transplanted, it will preserve them from the attacks of the wireworm and grub. A little precaution taken in this direction sometimes means a gain of some pounds sterling in the crop. *H. W. Ward, August 11.*

COLONIAL NOTES.

TRINIDAD BOTANIC GARDEN.

THE exclusively botanical and experimental work is henceforth to be carried out at the St. Clair experiment station. Nothing is removed from the old garden, but representatives are placed at St. Clair under more modern systems of classification. The old garden, in which the Governor's residence is situated, will be kept up as an ornamental garden.

The Tobago experimental station is under the direction of Mr. Miller, and under the immediat

control of the Superintendent of the Trinidad Botanical Garden.

The work carried on by the Department by Mr. J. H. Hart at St. Clair, when all arrangements are completed, will be as follows:—

1. Agricultural and horticultural experiments and trials, including the raising and testing of seedling Sugar-canes.
2. The propagation and distribution of timber-trees, economic and decorative plants (by sale or otherwise).
3. The cultivation and trial of different classes of native and imported trees and plants of botanical interest.
4. The study of diseases of plants, occasioned by insects, fungi, &c.
5. The collection from forest and roadside of botanical specimens, in view of the preparation of a flora of the island of Trinidad, and for scientific reference.
6. Collecting, importing, and growing the best varieties of tropical fruits, to prove their value for Trinidad.
7. (a.) Training men and boys in agricultural and horticultural work; (b.) Training young men after leaving school who intend becoming planters; (c.) Providing lectures for the school teachers of the educational department, who are to teach elementary agriculture in schools.
8. Distributing information by bulletins, reports, and correspondence.
9. The importation and growing of newly-discovered plants from various countries.
10. The maintenance of exchanges of plants, seeds and specimens with botanical establishments—foreign and colonial.
11. Conducting agricultural examinations of men, boys, cadets, school teachers, &c.
12. Keeping and recording meteorological and seismographical observations.
13. Overlooking current foreign and colonial literature and exchanges, for articles on tropical cultures likely to be of use locally.
14. Inspection of railway-stations annually. Official attendance at agricultural society's meetings, and other miscellaneous duties.

QUEENSLAND ACCLIMATISATION SOCIETY.

This Society continues to do good work, and is turning its attention to the raising of new varieties of Sugar-cane with a larger percentage of Sugar than the old varieties. The workers must have faith, and be able to bear disappointment patiently; with these requirements fulfilled, we should say the ultimate result will be satisfactory, and in Queensland there are many things besides Sugar which could be grown.

THE ROYAL SOCIETY OF NEW SOUTH WALES.

I have only been a few days in England, and only a couple of days ago I obtained such of the *Gardeners' Chronicle* as had appeared during my travels. I regret that, in your issue of the 21st ult., you have issued a "Warning to British Scientists," in regard to New South Wales. The writer, who signs himself "V. H. W. Fawcett," attacks the Royal Society of New South Wales in the matter of a prize essay award.

No dates are given in the letter, but the prize (£25 and the Society's medal) was awarded several years ago, between the years 1890 and 1892 (I cannot give you the exact date, as I am away from books). During the last nine years a letter, couched in almost the same terms as the one addressed to you, but not over the same name, has appeared in at least two Australian newspapers, but the Council, in possession of the facts, has treated the insinuations with the contempt they deserve. The Council has declined to take any public notice of these attacks. I happen to be one of the honorary secretaries of the Society (though not at the time the award was made), and on my own authority I take upon myself to address you on the subject, and only take this unusual step

because of the universal respect in which the *Gardeners' Chronicle* is held in New South Wales.

Owing to deaths, resignations in accordance with bye-laws and other causes, the *personnel* of the Council is different to what it was nearly a decade ago; and there should be strong reasons for holding up a public body as a shocking example for an act of their official predecessors of several years back. The Council of the Royal Society of New South Wales has always included some of the best names in the colony, and I am stating a truism when I say that the code of personal honour of the members will be found to be as high as that of any of the renowned British societies. Although we have the misfortune to live so far away from our mother country, we claim that, in our local Royal Society we conduct our business according to the best traditions of British gentlemen.

The essays referred to were examined by a committee of two, Mr. Charles Moore, my predecessor in the direction of the Botanic Gardens at Sydney (a member of the Council), and the Rev. Dr. Woolls, a friend of Müller for forty years, and a man universally respected and beloved. When Dr. Woolls died in March, 1893, it was everywhere conceded that our foremost New South Wales botanist had passed away. They awarded the prize to "the school teacher" rather contemptuously alluded to, and who is one of the best naturalists in the Colony. The Council confirmed the award, and from that day to this one of the disappointed candidates has expressed dissatisfaction with the award. I may mention that neither Mr. Moore nor Dr. Woolls knew the names of the authors of the competing essays; and, as regards the adjudication, it is impertinent to imply they were ignorant judges, and wicked to insinuate they were corrupt.

As regards the slight alteration in the title of the essay, that was made after the award, and on application by the successful candidate. The Council saw no objection, and it certainly does not affect the merits of the essay in any way.

I have already trespassed unduly on your space, and would say that this is the first time I have heard of "V. H. W. Fawcett, D.Sc., &c., of Sydney. We are but a small community, and I have exceptional means of obtaining information, owing to the various official positions I hold. The name is absolutely unknown to me; nor have my fellow-colonists whom I have been able to consult ever heard of the name. He may, of course, have resided in Sydney a week or two, but I respectfully protest against "V. H. W. Fawcett, D.Sc." (I wish he had added the name of his University) posing in the *Gardeners' Chronicle* as a New South Welshman, called upon by a sense of duty to warn British scientists against the corrupt methods of some of their brethren in the "Mother Colony of the Australias." *J. H. Maiden.*

GUTTA-PERCHA.

It is one of the strangest facts in the evolutionary history of man that the discovery of the insulating qualities of gutta-percha should have been so nearly coincident with the demand for such a material, when ocean telegraphy became a pressing need. India-rubber, a similar gum in many ways, forms no reliable substitute, especially because it has been found to deteriorate in sea-water, while gutta-percha not only improves under the enormous pressure of the deep-sea waters, but appears to be absolutely imperishable; a material, indeed, of essential consideration when the cost of an ocean-cable may possibly exceed a million of money. India-rubber, too, presents many technical difficulties in its application; pure it is useless, and vulcanised the sulphur comes in as an uncertain agent. Hence, it is very doubtful, if gutta-percha had not "turned up," that ocean telegraphy would even now have been practically useful. Here at once we appreciate what a debt we owe to the poking and prying investigator who saw this gum, tried it, and utilised it in other ways, and thus paved the road to the discovery of its insulating

capabilities, of which he certainly never dreamt, being an untutored and unknown native Malay.

In 1843 one José d'Almeida, a Portuguese engineer, first sent over specimens of native-manufactured whips, knives, hats, &c., to the Royal Asiatic Society. A little later Dr. Montgomerie, a surgeon in the service of the East India Company, noted the peculiar faculty it has of softening in hot-water, and subsequent hardening in the shape then given; the idea of surgical splints was thus suggested to him. But it was not, according to some authorities, until 1848 when Prof. Faraday took the substance

found to be marketable in savage countries, the utmost improvidence prevailed in its collection, the trees being ruthlessly cut down and drained of their sap; and as it takes twenty-five years for a tree to attain a size capable of yielding an appreciable supply, it is easy to see that even primeval forests, dotted only as they are with trees of the right description, are sure soon to be entirely depleted. In 1881 alone, the export justified the belief that no fewer than 5,000,000 trees were felled in Borneo, and as these are hewn down in the midst of younger ones without any consideration for the

lector, too, replaces the savage, and finds that a partial draught from time to time upon the tree's resources can well be borne, so that the "goose with the golden eggs" is kept alive, and becomes a perennial source of profit. The Dutch have introduced the gutta-percha plants at Buitenzorg, and the French into Cochin China; and thus, with a judicious check upon the extirpating native methods in the original forests of Borneo, Sumatra, and elsewhere, it is to be hoped that an adequate supply will be maintained, and that we shall not find our trans-oceanic nervous system paralysed some day for the want of its proper integuments. *Chas. T. Drury, F.L.S., V.M.H.*

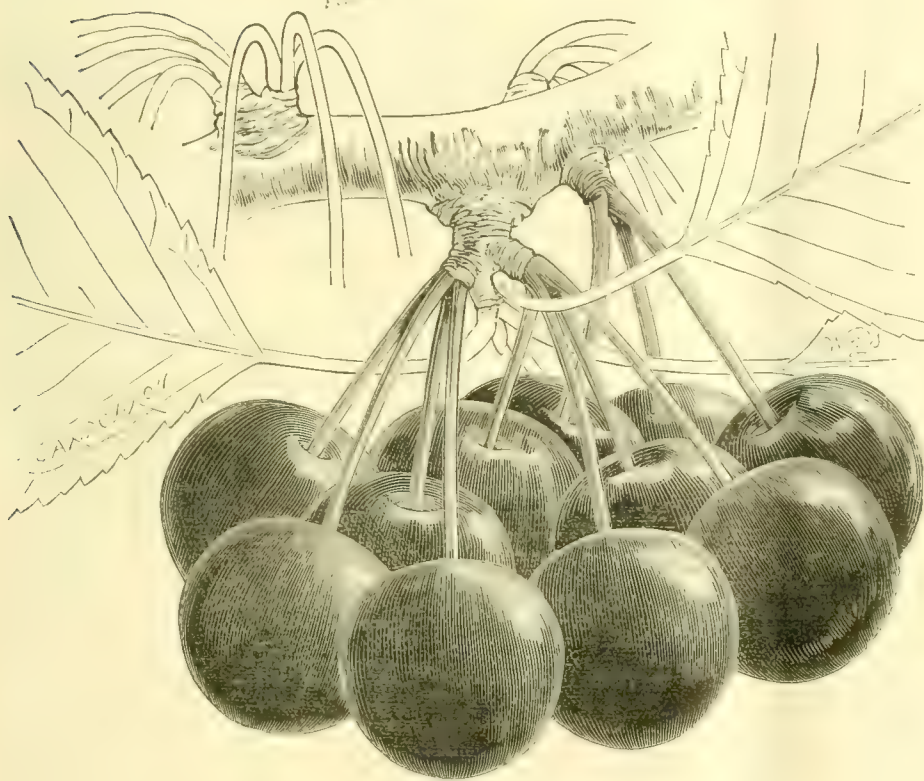


FIG. 34.—CHERRY "NOBLE."

CHERRY "NOBLE."

THIS fine-looking excellent Cherry (see fig. 34), shown last year at one of the meetings of the Royal Horticultural Society, receiving an Award of Merit on the occasion, and which was favourably commented upon in our issue for August 4 last, p. 91, was again shown by the raisers, Messrs. W. Ray & Co., of Mount Pleasant Nurseries, Teynham, Kent, at the Royal Horticultural Society's meeting on July 31 this year. It is an attractive-looking fruit, of large size, good flavour, and firm flesh, and should become a valuable market variety.

THE MIMULUS.

PLANTS, and especially old ones in point of remoteness of introduction, undergo revivals, and though they may have to pass through a season of neglect, they yet at some time attract attention, and renew something of their old popularity. This appears to be true of the Mimulus. Some of us are old enough to remember the earlier improvements of *M. luteus*, which was introduced about 1826. Original forms can still be found in cottage and villa gardens, growing freely from perennial root-stocks year after year, and forming dense tufts of golden blossoms in June. Not long since I met with a sturdy-growing form in a Buckinghamshire cottage garden, the blossoms of a bright gold colour, without a trace, or scarcely a trace of spotting.

In course of cultivation, *M. luteus*, which at its introduction had two dark marks in the mouth of the corolla, developed forms having spots on other parts of the segments; these variations were noted, larger size and greater substance followed, then varietal names were given, and lists of named Mimulus appeared in catalogues of florist's flowers, and they are still to be found there, though to a limited extent.

A great stride was made in the improvement of the Mimulus when Messrs. James Veitch & Sons introduced from Chili, in 1861, the coppery *M. cupreus*, the name which was given to a dwarf-habited plant with blossoms of a bright coppery-red hue. Up to this time the large-flowered, spotted Mimulus, though varying in size, colour, and disposition of the markings, yet generally agreed in this, that either on each of the five segments of the corolla, or on the lower segment only, there was a large blood-coloured blotch, often, indeed, occupying the whole of its surface. Various irregular blotchings were at times super-added, and in the act of seeding and selecting, the size of the blossoms became very much increased.

The new *M. cupreus* was quickly utilised by raisers, and crosses made between it and some of the large garden varieties. In time this led to the development of a maculated strain known as *Maculosus*, in which the large blotches of colour in the older type became broken, and dispersed over the surface of the corollas in much smaller and even minute spottings; while the blood of *M. cupreus* gave coppery and orange tints, increasing the area of coloration, and even affecting the ground, the yellow becoming pale almost to cream. Varieties of *Maculosus* were named and distributed until the strain became common, and naming ceased. The tendency of late years has been for the blotches to

in hand that its higher destiny began to dawn upon the world, though it is claimed on behalf of Dr. Werner Siemens that he had suggested it as an insulating medium in 1846 to the Prussian Government. In any case it eventually proved to be precisely what was wanted, and curiously enough, though it is now approaching half a century since it began to be used, and the comparative scarcity and difficulty of supply has stimulated research in all directions for a substitute, it still remains master of the situation, since it only requires to be cleansed and purified to be available for the purpose in view. The gum is yielded by several trees of kindred species, but chiefly from *Isonandra Gutta*, now mainly met with in Borneo, though first recognised in Singapore. Like all native products

latter, it has been estimated that five times as many were destroyed.

Although few people can grasp the idea of the enormous number of trees which go to form wide-spread forests, the expert will gather from these figures that the waste is frightful, and would mean in time practical annihilation if it were permitted to continue. Fortunately, as in the case of the Cinchona trees which yield quinine, so soon as the value of these native products is established, and a constant demand begins to threaten extermination, the botanist lends his aid, first, by determining exactly the species best fitted to yield the supply; secondly, by inducing its cultivation in other parts of the world which his study leads him to think are congenial. The practical col-

enlarge rather than diminish, but smaller spotted varieties appear among seedlings.

Hose-in-hose forms appeared among the Maculosa strain, but it was found that seeds saved from them could not be depended upon to reproduce the type; occasionally a hose-in-hose form will appear, and they who attach a value to this characteristic, should perpetuate it by means of root division or cuttings. A double form or two has also been found in cultivation.

Strains of large-flowered *Mimulus* are now so good, and the blossoms produced by seedlings in their young stage so fine, that naming is now but rarely followed. The seeds germinate very quickly, the young plants grow rapidly, and the plants flower when quite small. *Mimulus* are excellent plants grown in pots for house decoration; they should be grown in rich soil, and need an abundance of water when the pots are filled with roots. If kept close and confined, the plants soon become affected by green-fly; they should have ample room, with light above and around them, and a free circulation of air. A very showy bed can be made with the *Mimulus* in the open; if planted in rich soil, as a matter of precaution it is well to place a stake as a support to the main stem. If the blossoms are beaten down during a rain-storm, they come out again in plenty where bright sunshine follows. *R. D.*

OUTDOOR PEACHES.

Few fruits give greater pleasure in growing than this, and few at the same time want more attention or repay it better. From the time of their blossoming in March, till the time the fruit is picked in late summer or autumn, they require some attention every month. The month of August is when the later sorts want special attention in many ways.

A number of fruits may still be picked off with advantage where the trees are cropping heavily. Even on strong shoots it is seldom advisable to leave more than two fruits, often not more than one. Nature needs a good deal of restraint here. Her object is to produce as many stones (seeds in their hard cases) as possible to ensure the reproduction of the species, even if there is little more flesh on them than on an Almond. Our object, on the contrary, is to get the maximum amount of flesh; and ten Peaches, where they have been properly thinned, may easily produce a greater quantity of luscious pulp than twenty or thirty where they have not been so thinned.

Sometimes, when the fruit should be swelling rapidly, there will be noticed a number of fruits with a brownish appearance and a stunted look. These should be picked off at once. It may be there has not been sufficient phosphate in the soil to enable the tree to accomplish its stoning properly—always a critical operation, and a time when the tree wants the greatest amount of solid matter from the soil; or it may be that the tree, in the process of stoning, has so exhausted the available food supply that it is now starving. What the tree needs is a judicious application of liquid-manure, especially if the weather is hot. The best thing to use now is good guano, with an analysis of 8 to 10 per cent. of ammonia, and 30 to 35 per cent. of phosphates. It may be used at the rate of a handful to a 2-gallon can of water, soft if possible, as that dissolves more of the phosphates. If this is administered twice a week, at the rate of five to ten cans to a tree, according to the dryness of the weather, the results will be simply marvellous.

An important thing to be looked out for is that enemy of Peach-trees, the aphid. Not only do the aphides spoil the shoots which nourish them, but they exhaust the tree, as they suck the sap of the young shoots in such abundance, that they cannot assimilate all the sugary substances it contains, and consequently they exude it on minute horn-like protuberances on their backs, much to the delight of their friends the ants, who are there ready to relieve

them of it. This forms a most serious drain on the tree, especially when it is wanting all this sugary matter for the swelling fruit. The leaves at the ends of the shoots are so curled that syringing does not dislodge the aphides entirely, and if a few are left they soon become many. The better way, or perhaps an additional precaution, is to take each infected shoot and, holding it point downwards, dust it with tobacco-powder. Two applications of this, perhaps one, will be an effectual cure. A quarter of an hour will suffice to dust a big tree.

If not already done, the young shoots should be nailed in at once, to give the fruit all the sun and air possible, those for which there is no room being taken off at the junction with the parent-stem, care being taken not to bark the latter more than necessary. The other strong-growing shoots should, when the fruit begins to ripen, be cut down to the length it is proposed to leave them for the next season, so that the strength which is running to waste in making lengthy shoots should be sent into the swelling fruit. These remarks, of course, apply to September and October Peaches, and not to the early sorts, which have by this time been gathered. Only those who have grown Peaches know the daily delight of seeing them get redder and bigger in the sunny weather we often get from the middle of August to the middle, and even sometimes to the end of September. *P. A.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Ilchester, Abbotsbury Castle, Dorsetshire.

Rose Cuttings.—For light, warm soils, Roses on their own roots succeed far better than budded plants. Cuttings of matured wood, 10 inches to 1 foot long, if taken now with a heel, will root readily if inserted in a rich sandy soil. The ground should be carefully prepared, levelled, and made fairly firm, and having prepared the cuttings and labels, put them in straight rows, 9 inches apart, in small holes or shallow trenches, the cuttings being inserted to half their length in the soil, which should be made firm; they should stand upright.

Autumn and winter-flowering bulbous plants.—The following are the names of bulbous plants which come into flower in the autumn and winter seasons. Preparations may shortly be made, and orders given to the bulb-dealer: *Anemone fulgens*, and *A. stellata*; *Chionodoxa Lucilæ*, *C. grandiflora*, *C. sardensis*; *Colchicum autumnale*, and its varieties, with numerous hybrids; *Crocus autumnalis*, *C. præcox*, *C. speciosus*, and varieties; *Eranthis hyemalis*, for massing on the turf or planting on banks, an ever-welcome early-flowering plant; *Erythronium* is great variety; *Galanthus* (Snowdrops), all are beautiful for naturalising on the turf; *Leucojum vernum*, *L. carpaticum*, *L. autumnale*; *Sternbergia lutea*, and *S. angustifolia*, having deep, yellow-coloured flowers, and broad, Narcissus-like leaves.

Narcissus odoratus (Sweet Campenelle).—When planting any of these bulbs and tubers, the ground should be well manured with stable-dung broken up finely, deeply dug, so as to afford a fine tilth. Retentive soils may be dressed heavily with one-year-old leaf-mould. When planting on the turf, a crowbar may be used for making the holes, which may be deep, and should be partly filled with suitable soil. Pleasing combinations are made with two or more species planted together. Bleak aspects should not be chosen for such plants, or leaf and flower will be readily injured. After the soil has been allowed a sufficient length of time to settle, it should be raked over, and the bulbs planted with just sufficient good earth over them to prevent disturbance; a rake or hoe is used on the land. "*Sternbergias*" succeed when the bulbs are planted quite close to the surface, in consequence of their large bulbs being thoroughly ripened during their season of rest. They should have a piece of ground which is well drained, and the soil porous. Under these conditions they prove hardy in most parts of the country, and may remain undisturbed for several years.

Sweet Campenelle, Narcissus odoratus.—This bulb flowers in the spring, and should be planted early. Contrary to most Narcissus, the bulbs

increase rapidly if a good bed of peat be prepared for it, in which plenty of sand is mixed, the blossoms coming much finer, and offsets are freely produced if the bulb be left undisturbed. This preference for peaty soil makes plants useful for planting between or around dwarf *Rhododendrons*, *Andromedas*, &c., and there they need but little attention, if once carefully planted.

Spanish Iris.—These bulbs are suitable for planting in rich vegetable soil, and in clearings in the woods. They thrive where the soil does not become much dried up, and in such soils and sites they produce numerous flowers, the patches increasing in size annually. At Abbotsbury, on the line of a disused ditch, filled with the right sort of soil, they succeed admirably. They are not so prone to disease or to weevil attacks as the English Irises.

Iris stylosa and its Varieties.—These should be planted in the same kind of soil as the last, and the roots can be divided, but not too severely, and planted this month. Where they can have a sunny place and liberal treatment, they produce great quantities of their mauve, or lilac and white flowers. They flower from two to three months, beginning in February.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Sobralias.—Many valuable additions have been made to this genus of late years, which, as they become better known, will become popular. An apparent drawback to the cultivation of *Sobralias* is the ephemeral nature of the bloom, which, however, is produced in succession from the same flowering-reed, so that need not count. Nearly all are of easy cultivation in any sort of glasshouse having an intermediate temperature throughout the year. It is not always good practice to repot any plant because the pot or tub is filled with roots, although in order to keep the plants growing healthily, repotting about every second year becomes a necessity. The operation should be carried out about a month after a plant has ceased to flower, the interval allowing for recuperation. Large, moderately shallow receptacles should be used, as they are surface-rooting subjects; and these should have crocks put in to half the depth, the rest being reserved for a compost. This may consist of turfy-peat one-third, turfy-loam one third, with well-rotted cow-dung, chopped sphagnum-moss, fine crocks and sand, one-third. Plants requiring to be divided should be turned out, and the tangled mass of roots cut through with an edging-iron, it being impossible to separate the mass without causing damage to the roots. For two weeks after being so treated, no water should be afforded; but afterwards a gradually increasing quantity should be applied until the winter, when the soil should be kept just moist. A close atmosphere and dense shade is injurious. *S. macrantha*, with its varieties and natural hybrids, should have the cooler position; and *S. xantholeuca*, *S. Sanderiana*, *S. Amesiae*, *S. virginalis*, and *S. sessilis*, the warmer. They are very clean plants, thrips and aphids being the only insects likely to affect them, and these may be kept under by frequent light fumigations.

Cypripediums.—Many representatives of this large family may now be re-surfaced or repotted-on as the condition of each may demand, operating principally upon those which flowered during the present summer. With the declining light and consequent increase of moisture, *Cypripediums* generally make good progress. When turning out the plants, examine the tendency of the roots, whether they prefer to ramble near the surface, or penetrate downward, as by noticing their individual habits a clue is obtained to the depth of material required *pro ratâ*. Too much water should be avoided, or the new material will decay and become sour very soon. Excepting in the case of hybrids claiming affinity with those of the concolor section, it is inadvisable to raise the base of the plants above the edge of the pot. Seedlings should be afforded fresh material as soon as that in which they are growing shows signs of becoming sour.

Cattleya Lawrenceana, being late in commencing to grow, should be given a favourable position in which to develop its pseudo-bulbs; a warm, light part of the *Cattleya*-house, or stove even, being selected if their present one does not supply its needs. Do not apply much water, less harm resulting from a slight degree of drought than from superabundance.

Cattleya Eldorado and its variety *Wallisii*, plants of which are now in flower, being impatient of water remaining long about their roots, require well-drained pots, and but a small quantity of materials. Water is frequently required by them, but its passage through the compost should be rapid, so that dryness is likely to follow quickly. The conditions of an East Indian-house are necessary to their welfare the whole year.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Sweet Cherries.—With the exception of Late Duke, these are now clear of fruit, and afford an opportunity for cleansing the trees, should they require it. At this date insecticides of full strength may be used, as the foliage being mature and therefore firm in texture, will not suffer in consequence. Having done this, let all secondary growth made since the first stopping be shortened, and finish by training-in the young wood retained at the previous pruning. These are small matters, but if the trees are put in order at the present time, they will need no further attention before winter.

Figs.—The season so far has not been one of the best for outdoor Figs, and a fine warm autumn is needed in most parts of the country to ripen the wood. For this reason the current season's shoots should be reduced in numbers only, the best of them being left over the whole trees. Let them be nailed close to the face of the wall, where they will reap the benefit of great heat. All fruits forming on these shoots should be rubbed off, these being too backward to ripen this year, and too forward to stand the winter. Ripening fruit should be protected from wasps and flies, covering the trees with hexagon netting where these pests are very numerous.

Summer pruning.—Many of the trees that were stopped some few weeks back have pushed a great quantity of secondary growths, which should be stopped, for being of a weak watery nature, they are of no service whatever. The pruning of all trees needing it out in the open should now be brought to a close.

Strawberries.—If a sufficient number of runners have been layered from the late varieties, trim up the plants forthwith, and put the beds in order. Save the best of the self-rooted runners, and plant them out in nursery-beds at 9 inches apart. These will form good plants by next spring, and suitable for filling up gaps, and in case of emergency for forming new plantations next year. As opportunities may offer, get a mulch of well-rotted manure, or a compost consisting of one-half of the latter, and the remainder of old potting-bench soil, or similar material, wheeled on and spread between the rows of two and three-year-old plants. Well work this round the collars of the plants, and in a short time numbers of new roots and stout leathery foliage will form, which will afford good protection to the crowns in the winter months. Bring to a speedy close the formation of new plantations, not forgetting to mulch afterwards, as we may yet have another spell of hot dry weather to contend with.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Spinach.—To be enabled to have a good supply of this useful vegetable all through the winter, three sowings should be made, in case the earlier ones run to seed before early spring-sown Spinach comes into use. For one or two sowings it is difficult to advise as to the date, so much depending upon the locality and character of the soil of the garden. Speaking generally, the first sowing may be made at this date, sowing in drills drawn about 16 inches apart. I do not recommend the practice of steeping the seeds in water, unless the soil should be very dry, as so much water has to be afforded afterwards. A better method is to apply water to the drills a few hours before proceeding to sow. Land may now be prepared for later sowings, and rich manures, plenty of fresh soot, and unslaked lime applied to the soil. Long Standing Prickly is the best variety for these late sowings.

Coleworts.—Plants raised from the principal sowings may now be transplanted in rainy weather. If the Rosette and London are to be planted, the distances at which they stand may be 15 inches apart; and given a good start and a rich soil they

will not be much affected by frost. As has been mentioned, the land should be dressed with slaked lime.

Onions.—The main crop will now require that the ground between the rows be thoroughly cleared of weeds, and in the case of backward crops artificial manure may be spread broad-cast over the land; this being especially necessary when another crop will speedily take the place of the Onions. The silver-skinned Onion should be lifted as soon as of full size, as to leave them longer is to run the risk of the bulbs starting into growth if moist weather ensue.

Tripoli Onions.—The seed may now be sown, the plot receiving a trampling. Many failures with Tripoli Onions are due to over-thick sowing, as however carefully the thinning of the plants may be performed, it is impossible to pull up the plants without disturbing those that are left. In such cases, much labour is incurred in firming the soil; and unless this be done, the first hard frost destroys the crop. If the land is still under crop, the Onion seed may be sown in cold frames or boxes, and transplanted when the land is cleared. The bulbs obtained by this method are much larger than when the seed is sown in the open, if transplantation be carefully done. Giant Rocca, Giant Lemon Rocca, and Globe are excellent for this sowing.

Potatoes (Second Early).—The rains have saturated the ground, and made the lifting of the crop an easy matter, and now that the skin of the tuber is firm, and the tops are ripe, the sooner they are lifted and stored the better. The tubers should be put into heaps of a moderate size in a cool store-room or cellar, and covered with mats, but where there is not this convenience, they may be laid out on straw in a shed, with a moderately thick covering over them.

Winter Radishes.—Seeds of the Black Spanish or China Rose Radishes may be sown on a south border. Shallow drills should be drawn about 9 inches apart, and the seed sown thinly. The beds should be netted to prevent losses from the birds, and water afforded when the land is dry. After the last thinning the plants should stand at 3 ins. apart.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

Chrysanthemums.—The plants having made plenty of roots, and in some cases flower-buds, weak guano-water or other manure may be afforded them. The guano should be put into a water-pot, and be stirred with a stick at time of using, and only sufficient should be added as will just give colour to the water; but the dose may be increased later, and also a change of nutriment, as soot and farm-yard manure-water given instead. Let all side-shoots be removed, only four or five of the strongest growths being retained; for exhibition blooms only three are left. From the present time till the beginning of September, the selection of the flower-buds should be made; and as soon as these are chosen, the three shoots at the base of each should be removed. The early morning is the best time for this operation, as the growth is then more brittle than later in the day. In most cases the crown buds produce the finest blooms, though if taken before the end of the present month, the flowers are oftentimes coarse, and sometimes they harden, and fail to develop properly. In other cases the terminal bud is the better. But these details the gardener can best decide according to the locality, the sorts grown, and the purpose for which they are required. Let strict attention be paid to affording water, examining the pots after rain, which leaves the surface moist, although no water may reach the roots; and to keeping a sharp look-out for earwigs. During fine weather syringe the plants morning and evening.

Caladiums, Tuberous Begonias, Gloxinias, and Achimenes.—These plants should now be removed to brick pits, and exposed to sunshine, the amount of water afforded being reduced so that the foliage may die off in a natural way.

Show and Fancy Polyanthiums.—The older plants may be cut hard back, and when started, shaken out and repotted in smaller pots. Cuttings, when rooted, may be potted up in large 60's. For indoor decorative work, cuttings grown on the market plan annually are very useful, the plants being compact, and well furnished with foliage.

Fuchsias.—Those plants that were stood outside will furnish good cuttings; and a stock put in now,

and kept steadily growing on in an intermediate-house during winter, will be valuable for spring and early summer flowering.

Bougardias.—Continue to stop the stronger shoots, but not later than the end of this month, and afford manure-water two or three times a week.

Pot-Roses should be examined, and repotted if necessary, or if larger pots are not desirable, the surface-soil should be loosened with a pointed stick, and removed, a top-dressing of rich compost being afforded, and made firm with a rammer.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Figs in Pots.—Late Figs should be afforded manure-water occasionally, and the house kept in a humid state by day. Let the shoots be thinned, or the maturing of the same will be difficult at this season; and remove imperfect fruits, and reduce the crop to one of moderate weight.

Fig-trees on Outside Walls. carrying good crops of fruit, should be covered with temporary frame-lights, so as to get the fruits ripe not later than September. A little extra attention in affording water after the trees are covered will be repaid by the superior quality of the fruit.

Muscad Vines.—The nights being cool and the dew heavy, make it desirable to keep the Muscad-house rather drier than hitherto while the fruit is ripening, and to afford slight artificial warmth at night, and not to damp down early in the afternoon, except in very hot weather, when the house may be left open one or two hours longer than usual. The Muscad-house should not be closed entirely after the fruit commences to ripen, and enough ventilation should be afforded at night, which in combination with the warmth from the hot-water pipes will secure buoyancy in the air of the vinery, and prevent condensation of moisture on the bunches. Abrupt raising of the warmth early in the day should be guarded against, ventilation being increased as soon as the sun strikes the house, a sudden rise while the berries are cool leading to condensation of moisture, cracking of the skins at the footstalks, and other evils. If it be desired to colour some of the bunches at an early date, a little extra light may be afforded them by tying aside a leaf or two, otherwise it will be better to allow colouring to take place slowly under a moderate amount of foliage for six weeks longer. Too great an exposure of the fruit is apt to cause shrivelling, and when this has once commenced, no after treatment will give plumpness to the fruit. Let the border be afforded water as often as may be necessary, applying it on a sunny morning. A temperature of 70° to 75° at night, and 10° higher by day will be necessary to secure well-ripened Muscad Grapes. If there are bunches still on the Vines in the earlier houses, which it may be desired to keep clean and fresh as long as possible, they may have a covering of stiffish paper cut of a circular shape, placed over the bunches, which will ward off the too ardent sun's rays and the dust.

Late Vines.—Whilst the fruit is colouring, the Vines should be maintained in the highest state of health for two months longer. All borders inside the vineries, if they are well drained, should be afforded water once in ten days, and outside ones a good soaking, when water is seen to be required, especially that part abutting on the wall of the vinery. A light shade of fish-nets should be applied to the roof in very bright weather, as it tends to reduce evaporation from the foliage. All Grapes for late keeping are improved when ripened in warmth, especially Gros Colmar; and chills and draughts must be avoided. A regular and even degree of warmth, and a moderate amount of aerial moisture, tend to improvement in the quality of the fruit. As the majority of late Grapes take a long time to ripen, artificial heat should be continued after the fruit is coloured, or it will not keep well. A night temperature of 65° to 70° with fire-heat, and 80° to 85° on sunny days, will be suitable.

Pot Vines.—The canes being hard and well matured, with the old foliage still sound, the laterals may now be removed in order to concentrate the energies of the Vines in the stronger buds. These Vines should be gradually inured to cool treatment, previously to placing them in a sunny spot out-of-doors. The quantity of water afforded at the root may be diminished as the foliage ripens. Heavy rain should be guarded against, and the pots protected from strong sunshine.

EDITORIAL NOTICES.

ADVERTISEMENT should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the **EDITOR, 41, Wellington Street, Covent Garden, London.** Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Aug. 21—Paris Exhibition (temporary Show).

WEDNESDAY, Aug. 22 {Shropshire Horticultural Society's Exhibition at Shrewsbury (two days).

FRIDAY, Aug. 24 {Bradford Horticultural Society's Show (2 days).

SATURDAY, Aug. 25 {Upper Strathearn Horticultural Society's Show.
Worsley Agricultural and Horticultural Society's Exhibition.

SALES.

FRIDAY, AUGUST 24.—Imported and Established Orchids, Roman Hyacinths, Narcissus, &c., at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—61°.

ACTUAL TEMPERATURES:—

LONDON.—August 15 (6 P.M.): Max. 72°; Min. 59°.
August 16: Fine, warm.

PROVINCES.—August 15 (6 P.M.): Max. 75°, South-west Ireland; Min., 56°, Orkneys.

WE have received the following communication from the High Commissioner of Canada, which will be of interest to many of our readers:—

"The time seems opportune to discuss this important subject—questions relating to it have been frequently put of late by visitors to the Canadian Pavilion, as well as by visitors to the Palais d'Horticulture at the Paris Exhibition.

"An extensive display of fruit in the natural state—the exhibit comprising a large number of varieties, all in fine condition, and at so late a date, is, to those who are not accustomed to it, a cause of astonishment. How have so many kinds of Apples been kept till the middle of July in such fine condition? and how have they been brought so far without injury? These are some of the questions that are put daily, and that require to be honestly answered. It was expected these questions would be put, and it was intended that the fruit itself would stimulate questions.

"Nearly a hundred varieties of Apples in the natural state were collected by the Government of Canada last season, and stored away for the exhibit to be made this year in Paris. It was intended that this should be made valuable commercially, and perhaps also stimulate immigration to a country that was capable of producing such fruit. While Apples alone in the natural state are exhibited, Pears, Peaches, Plums, Quinces, and all the small fruits are shown in clear antiseptic solutions, that permit their size and beauty to be readily seen.

"The chief exportable fruit from Canada is the Apple. In an ordinary season, the quantity of this valuable fruit available for export is very large; once or twice in a decade it is extraordinarily large, and in such years it is

sometimes difficult to dispose of it satisfactorily. To dispose of this abundance with profit to the Canadian grower and advantageously to the European consumer, is the object of this item.

"Of the hundred (more or fewer) varieties that have been brought to Paris for exhibition, 10 or 15 per cent. would comprise all that would safely be made the object of a lucrative export trade. A larger number might, during a short season, be made profitable. Some of the very fine fleshed Apples might with safety be shipped in the late fall and early winter. Into this number Apples of the Fameuse type would figure largely. All of this class would require to be shipped as soon as gathered, and would also require to be very carefully handled. They would be well worth the trouble, however, during a very limited season; but for the general trade something that will handle well is what is required. Fortunately, to meet the requirements of such a trade, the Canadians have a large and useful list; this includes Apples of the highest quality, as well as some of only secondary quality—a list of varieties and some of their characteristics. Among the first is the Northern Spy: this fine kind is better known as "Spies"; few sorts equal it in its many good features—it is of the highest quality, it is of fine size and appearance, and handles well, and always commands a good price. After being exposed a month in the hot building, the Palais d'Horticulture, many of this variety are not only sound but have retained their juiciness.

"Almost as much may be said of the Russets; several sorts came under this designation, all of them, the Roxbury Russet, the Golden Russet, and the Nonpareil, all of these keep and handle well, and are of first rate quality. The Ben Davis is of good appearance and handles well, perhaps better than most, but is of only second quality; in spite of its poor quality it is entering largely into the export trade. The Baldwin is probably next to the Spy in quality, and is better known in the trade; it has few equals as a shipping Apple. The Rhode Island Greening, or Greening simply, is not in as much favour as it was formerly; it is, nevertheless, a useful kind to ship. The Mann, and some others of recent introduction will, in time, displace it. The Esopus Spitzenburg, or Spitz as it is familiarly called, is one of the best, but is not as profitable to the grower as some of the others. Amongst Apples of large size that ship well and bring fair prices, are the Kings and Fallow Waters. The Kings have, for many years, been favourites in the trade, their large size and fine colour render them attractive; they are, besides, a fair quality and handle well. The Fallow Water is fully larger, and this year has handled much better; it travelled three thousand miles by rail before reaching the steamship, and yet some of the cases gave over eighty per cent. good sound fruit on reaching Paris. Another of this class is the red-cheeked Pippin, it also came from British Columbia, and reached Paris in good condition; it is a splendid fruit. Newtons also did well in every respect, and proved themselves to be good shippers and handlers.

"Amongst the very fine kinds that are not exported as extensively as they ought to be, are the American Pippins; this is only of medium size, but is of perfect form and handsome colour, and equal to the very best in quality—it came through the ordeal this year with credit. The Blenheim Orange is a fitting companion to the

American Pippin in every respect; both are in perfect condition to-day, and the test they have undergone was a severe one.

"Then there is the Canada Red, the Canada Baldwin, the Wagner, the Winesap, and a host of others that might be named, all good varieties that ship well; but a sufficient number of varieties has already been named for every useful purpose in the trade.

"Some of the kinds enumerated may be shipped safely at almost all times, such are the Northern Spies, Spitzenburg, Baldwin, Ben Davis, the Roxbury, and the Golden Russets; but the Apples of the more famous type, such as the Fameuse, the MacIntosh Red, the Scarlet Pippin, the Princess Louise, &c., should only be shipped as soon as gathered, and disposed of at once for immediate use, as, except under exceptionally favourable conditions, they would keep only a short time, and might disappoint the handler.

"The question of the size and shape of the packages for export has been pretty well thrashed out; the ordinary Apple-barrel holding about two and a half bushels, and weighing, barrel and all, about 150 lbs., is the favourite package, though a large number of cases have been shipped of late years holding about 60 lbs. weight of fruit. In these cases the fruit is in separate compartments, and is landed generally in the best condition. This is a specially useful package for early fruits, and the fine soft fresh kinds of the Fameuse type."

"**KEW BULLETIN.**"—The Appendix II. for 1900 contains a complete list of the new garden plants brought under notice during the year 1899. It is very serviceable, and may be had for a few pence from EYRE & SPOTTISWOODE, East Harding Street, Fleet Street, London, E.C., or any bookseller.

LOGANBERRY.—We note that this fruit, a cross between the Aughenhaugh Blackberry and Red Antwerp Raspberry, is getting into our nurseries. Some very fine fruits of the Loganberry were shown at the Drill Hall, on July 17 last, by Rev. W. WILKS, Secretary of the Royal Horticultural Society, which were quite palatable although they were scarcely ripe. It is of fair flavour, and for jam or jelly making its cultivation by cottagers and others is deserving of encouragement by County Council lecturers on horticulture and horticultural societies all over the country. The fruit ripens at the close of the chief Strawberry season, and in advance of the early Raspberries, and remains in bearing for a period of three weeks. It was raised in California by Judge LOGAN, after whom it was named, and was introduced to this country about three years ago, receiving an Award of Merit from the Royal Horticultural Society on July 13, 1897, when shown by Messrs. FELL, of Hexham.

"**STATISTICS, HISTORY, AND RESOURCES OF NEW SOUTH WALES.**"—This handbook is compiled by the editor of the *Year-Book of Australia*, by authority of the Government of New South Wales, for circulation by the Agent-General in London (Westminster Chambers, 9, Victoria St., S.W.). Its scope may be gathered from the title, and we have in short space, lists of the Governors and Members of the Parliament, and particulars of Government Departments. Then follow astronomical, meteorological, and live stock returns, legal, educational, medical, military, and naval notes; records of trade and commerce; then notes on the history and geography of the Colony. A postal and railway guide is appended, and records of the mineral, forest, and other resources, and of various industrial enterprises. The book is a valuable work of reference for all specially interested in New South Wales and its development.

HORTICULTURAL EDUCATION IN GERMANY.—We have received from Prof. L. WITTMACK, his article (now published separately) contributed to the *Official Handbook of the German Section of the Paris Exhibition*, and dealing with horticulture, its Progress and Status in Germany. Speaking of horticultural instruction in Germany, he says that "It is splendidly developed. The higher education is cared for in Germany by three institutions: the Royal School of Horticulture at Wildpark, near Potsdam, that has been in existence for seventy-five years, and will be shortly transferred to Dahlem, near Berlin, in the neighbourhood of the

and Hesse one. In all these establishments courses of instruction are held on the culture and uses of fruit, vegetables, &c.; besides this, travelling gardeners carry such teaching to the different towns. In some cities, such as Berlin and Leipzig, there are schools of gardening for young people who do practical work in the day; in other cases, again, in Berlin for instance, it is the young gardeners who organise courses of instruction for themselves; or, again, apprentices and assistants attend the classes for adults. In yet other instances, gardening and fruit culture are taught the pupils in the gardens belonging to the schools."

The chart is divided into twelve vertical, and thirty-six horizontal sections. The horizontal sections comprise the principal vegetables from Artichokes to Turnips, and the vertical sections correspond to the months, and give indications what is to be done or left undone in each month in the culture or harvesting of each plant. In addition to this, occasional details are given as to the quantity of seed to be sown in each row, and various cultural notes. We presume the chart is specially intended for dwellers in the southern half of the kingdom. The necessary allowances would have to be made for the northern counties.



FIG. 35.—TRELLIS IN A PEACH-HOUSE AT THE HENDRE, MONMOUTH. (SEE P. 132.)

new Botanic Garden; the Royal Pomological Institute at Proskau, near Oppeln (Upper Silesia); and the Royal School of Pomiculture and Viticulture at Geisenheim am Rhein. The kingdom of Wurtemberg has, since 1860, possessed a private institution, the Pomological Institute of Reutlingen; and in Saxony, since 1892, the High Grade School of Horticulture has been active in Dresden. In Kœstritz is an establishment with a medium standard of instruction. The elementary schools of gardening are sometimes associated with the upper schools, sometimes independent; they are supported by the different confederate states, or by the local governments—Prussia includes twenty-three, Bavaria five, Saxony two, Wurtemberg four, the Grand Duchy of Baden one, Saxe-Weimar one,

"AMERICAN GRASSES."—This is an illustrated bulletin from the United States Department of Agriculture, Division of Agrostology, and is devoted to descriptions and analytical keys of the tribes and genera of North American grasses. Each genus is illustrated, the illustrations being particularly delicate, yet accurate and valuable. The letter-press is by Mr. F. LAMSON-SCHRIENER, Agrostologist, and is to be entirely relied upon; the book, as a whole, being an excellent study or monograph of the plants under discussion.

"GARDENING CHART."—Mr. H. C. DAVIDSON has compiled, and Messrs. FRED. WARNE & Co. have published in the form of a chart, a remembrancer of garden operations which will be very serviceable.

THE "MONTHLY REVIEW."—Mr. JOHN MURRAY announces the publication of a periodical under this title. The *Review* will deal with *omnibus rebus et quibusdam aliis*. We are pleased to learn that pushfulness and loud promises are to be avoided. We do not doubt that the new *Review* will prosper all the better for avoiding such vulgarities. The illustrations will illustrate the text, and not be merely pretty pictures. The *Monthly Review* will appear on September 19, and subsequent numbers on the 25th of each month.

A NEW WINTER-GARDEN FOR ABERDEEN.—A winter-garden, situated in the Duthie Public Park of this town, was opened recently by the Lord Provost FLEMING. It is intended that the

building shall be the nucleus of an extensive winter-garden. The building is 120 feet long from north to south, and 100 feet in breadth. The main feature is a lofty dome rising from the centre of the building to a height of 56 feet. The structure consists chiefly of glass, supported by a light framework of wood and iron, which rests on a granite base of rough ashlar work, with dressed coping. The building, which is under the capable supervision of Mr. PETER HARPER, the custodian of the Duthie Park, has already been stocked with a fine collection of plants, including a Palm 26 feet high; and a number of county gentlemen have sent very acceptable contributions of plants.

BATTERSEA PARK.—The sub-tropical garden is now to be seen at its best, several new designs in carpet and other bedding being in good condition. We may specify an oval bed in which sturdy examples of Ferns are raised on flat mounds, the almost upright walls of which are covered with *Tradescantia zebrina*, and on a lower level are placed solitary *Coleus* in variety. Similar in design we remarked a carpet-bed skilfully and artistically planted with succulents as solitary plants—a very dainty bed. Bamboos are doing well this year, likewise Cannas, *Datura arborea alba*, Fuchsias, Tobacco, and Giant Hemp. Lantanas are getting more generally employed in small beds, and Verbenas in mixture are used as a carpeting under Abutilons, Fuchsias, &c. The turf is of the loveliest shade of green, and altogether the upkeep, planting of the beds, and tidiness of the shrubberies, borders, and walks, reflect great credit on Mr. COPPIN, the superintendent.

IMPORT OF FRESH FLOWERS.—A year or two since a member of parliament interested in the sugar question, desired to know what amount of confectionery was exported from this country. He in vain, it is reported, tried the Board of Trade folks, until one of them suggested he might look in the direction of Pickles in the Returns: there sure enough he found "confectionery," and was happy. And so it happened that this last research in the vicinity of horses, drugs, seeds, &c., discovered the haunt of the newly inserted item—fresh flowers, and we find that last month the imports from France, Holland, Belgium, &c., amounted to the sum of £2,305. This, for July, is a very respectable sum, but we get a better appreciation of the nature of the trade when we learn that the total import for the seven months of the year amounts to £164,894. We have to thank the Board of Trade for this new feature in this valuable monthly publication of imports and exports.

CHISWICK.—The subjoined cutting seems to show that the Council of the Royal Horticultural Society is determined to carry out its policy of leaving Chiswick. This may be necessary sooner or later, but we do not think the time has yet come, since the lease has still some twenty years to come. The question is largely a financial one:—"The Royal Horticultural Society have appointed a sub-committee to visit and inspect various sites that have been suggested or offered for their new gardens in place of Chiswick. It is probable that at no very distant date a selection will be made, and the old garden will be surrendered to the ground owner, the Duke of DEVONSHIRE. What will become of it is, of course, at present undecided. The builders have got their eyes on it; and we understand that an important London club have been turning their attention to it with the view to setting up a fine club building to stand in its own grounds. The Chiswick local authorities have also set their hearts upon it for an open space for the public. It is true that the neighbourhood has Turnham Green, and Kew Gardens are not far distant; but the green is not much of a public pleasure-ground, and Kew Gardens are not a playground. If it is possible for the public to get this fine addition to their breathing spaces, they can hardly do wrong in securing it, and it can scarcely be doubted that this disposal of the land will be most favourably considered by the ducal owner."

LONICERA HILDEBRANDI, figured in the *Gard. Chron.*, vol. xxiv, 1898, p. 219, is now flowering in the open air in Mr. EWBANK'S garden at Ryde, where it is growing against a western wall. Among other treasures in flower in the same garden are *Rosa berberidifolia*, *Poinciana Gilliesii*, *Osteomeles rosmarinifolia*, and *Dasyliiron glaucum*.

STOCK-TAKING: JULY.—The trade and navigation returns for the month of July show a continuance of the increased value of imports and exports—an increase in value, be it noted, not in volume. This, of course, is to be regretted, but under existing political conditions, world-wide in extent, the fact cannot be wondered at. It may be said that there is some compensation to be found in the value of exports, but this is to be laid principally at the door of the coal industry. The value of the imports for the past month is £40,264,167, against £39,935,372, or an increase of £328,795. In several instances the effects of the open-door are very clearly perceptible—where failure is apparent in one section of the globe, plenty is clearly noted in others. Our usual excerpt from the "summary" table is as follows:—

IMPORTS.	1899.	1900.	Difference.
	£	£	£
Total value ...	39,935,372	40,264,167	+328,795
(A.) Articles of food and drink—duty free ...	14,691,228	14,943,537	+252,309
(B.) Articles of food & drink—dutiable	2,239,201	1,682,109	-557,092
Raw materials for textile manufactures ...	3,445,455	3,215,578	-229,877
Raw materials for sundry industries and manufactures	5,852,130	6,738,051	+885,921
(A.) Miscellaneous articles ...	1,084,374	1,066,391	-17,983
(B.) Parcel Post ...	88,242	74,111	-14,131

The always interesting figures relating to the imports of fruits, roots, and vegetables, are this month of more than usual interest, owing to the extension of the list in the returns, which is as follows:—

IMPORTS.	1899.	1900.	Difference.
	Busbels.	Cwt.	Value.
Fruits, raw:—			£.
Apples ...	117,835	16,971	-16,070
Apricots and Peaches ...	.....	6,003	+9,246
Bananas... bunches	.....	89,183	+39,402
Cherries... ..	104,026	100,303	+57,008
Currants ... ..	.....	49,334	+64,903
Gooseberries ... ..	.....	7,764	+3,003
Grapes	104,394	18,734	-20,990
Lemons	217,484	100,256	-14,134
Nuts—Almonds (cwt.)	3,193	4,630	+1,780
Others, used as fruit (value)	£36,412	£19,780	-16,632
Oranges	91,625	37,362	-5,670
Pears	49,823	20,942	-4,240
Plums	135,435	53,191	-8,615
Strawberries ... ..	.....	8,408	+6,949
Unenumerated... ..	483,615	99,831	-109,994
Vegetables, raw:—			
Onions bush.	454,268	372,687	-9,328
Potatoes cwt.	681,572	697,789	+39,614
Tomatoes "	...	160,303	+135,212
Vegetables, raw, unenumerated value	£215,002	£64,066	-159,936

Some loss of market has, we are informed, been a consequence of a dispute between ship-labourers and their employers; any dispute where the food supply is concerned is always to be regretted—especially, we think, where ripe and perishable fruit is concerned. The value of the imports for the first seven months of the year is placed at £295,899,033, as against £276,639,107 for the same period last year—or an increase of £19,259,926. Coming now to the brief tale of—

EXPORTS.

We have to record an increase for the month of £1,354,599. The total value for July was £24,550,557, against £23,195,958 for the same period last year. By the way, it is not unworthy of mention that whilst political affairs check advance in South Africa, China, &c., other markets have exhibited well-marked signs of recovery and advance.

THE FENN TRIBUTE.—From the *Journal of Horticulture*:—

Mr. R. M. HOGG	Mrs. FALCON STEWARD
Mr. J. WRIGHT	Mr. T. FEEDS
Mr. A. PETTIGREW	Mr. N. H. POWNALL
Mr. H. M. POLLETT	Mr. A. DEAN

From the *Gardeners' Chronicle*:—

GEO. WILSON, Esq.	Dr. MASTERS
Mr. T. TURTON	
Mr. C. ROSS	Messrs. SUTTON
	ARTHUR SUTTON

The sums received for the FENN tribute up to the present amount to £36 2s. 6d., all of which have been transmitted to Mr. FENN.

PUBLICATIONS RECEIVED.—*The Traveller* (George Newnes, Lt., 7-12, Southampton Street, W.C.) The fourth number of this publication is quite as good as were its predecessors. Apart from the useful letterpress, the illustrations are well chosen, and very pleasing.—*Fashion*, conducted and edited by "Beau Brummel, Jun." (4, Argyl's Street, Regent Street), is the "West-End Gentleman's Magazine and Dress Guide." The August number contains plenty to interest those to whom fashions are a care.—*Nature Notes*, August.—*Summer Number of the Harmsworth Magazine*, July (Harmsworth Buildings, Embankment, E.C.). This is full of appropriate letterpress and illustrations.—*First Records of British Flowering Plants*. Compiled by William A. Clarke. Second Edition. (London: West, Newman & Co., 54, Hatton Garden).—*Gardening Chart*; a Guide to the Cultivation of the Year's Vegetables, by H. C. Davidson (London: Frederick Warne & Co.).—From the United States Department of Agriculture, Division of Agrostology: *American Grasses*. III. (Illustrated, Descriptions of the Tribes and Genera, by F. Lamson (Scribner). A useful work, including in one cover much valuable information.—City of Boston, Department of Parks: *Twenty-fifth Annual Report of the Board of Commissioners for the Year ending January 31, 1900*. Records satisfactory progress, and contains some pleasing illustrations.—*New South Wales: Statistics, History, and Resources*. Compiled by the Editor of the *Year-book of Australia*, for circulation by the Agent-General in London (Westminster Chambers, 9, Victoria Street, S.W.).—From the United States Department of Agriculture, Division of Agrostology: *Bulletin*, No. 2: *Fodder and Forage-plants, exclusive of the Grasses*, by Jared G. Smith; and *Bulletin*, No. 23: *Studies on American Grasses*; A Revision of the North American Species of *Bromus*, occurring North of Mexico, by Cornelius L. Shear.—Technical Series, No. 8, *Contributions towards a Monograph of the American Aleurodidae*, by A. L. Quaintance; and *The Red-spiders of the United States (Tetranychus and Stigmaeus)*, by Nathan Banks.—*Proceedings and Journal of the Agricultural and Horticultural Society of India*, January—March, 1900. This contains the Reports of the President and Secretary, the proceedings of the year, and a list of officers and members of the Society.—*Annual Administration Report of the Forest Department of Madras Presidency*, for the twelve months ending June 30, 1899. The several chapters deal with: I., Extension and Constitution of State Forests; II., Management of State Forests; III., Gross Yield and Out-turn of Forest Produce; IV., Financial Results; and V., Forest Administration.—*The Tropical Agriculturist*, July 2. This contains, among other matter, articles and shorter notices on the following subjects: Pioneers of the Planting Enterprise in Ceylon, the late Henry Trimen (with portrait); Tea Companies (London—Ceylon), Area Planted and Capital; Coffee Planting in Nyassaland; Planting in Mexico; Experiments with India-rubber and Tea Planting in the Caucasus.—*The Tokyo Botanical Magazine*. The issue of this publication for June 20 contains articles by J. Matsumura, *Notulae ad plantas Asiaticas Orientales*; T. Ito, *Plantae Sinenses Yoshianae* IV.; N. Ono, *Notes on the Stimulating Effect of Certain Substances upon the Growth of Algae and Fungi*; Y. Yabe, *Catalogus plantarum ad Stationem Zoologicam Misakensem Sponte crescentium*; and T. Makino, *Bambusaceae Japonicae*. There are also sundry articles in Japanese, and notes and general jottings.—*Flora of Bournemouth, including the Isle of Purbeck*, by Edward F. Linton, M.A. With map. (Sold by H. G. Commin, Old Christchurch Road; Bright's Stores, The Arcade; and Mate & Sons, Bournemouth.)

A PEACH-TRELLIS AT THE HENDRE, MONMOUTH.

WE are indebted to the kindness of Mr. W. Crump, of Madresfield Court Gardens, for a full account of Lord Llangattock's garden at the Hendre, near Monmouth town, from which we take

the following note about the Bellegarde Peach-tree growing in a Peach-house :—

"If it were possible to convey intact to a meeting at the Drill Hall, James Street, Westminster, this perfect tree of a Bellegarde Peach (fig. 35, p. 131), the highest award would be unanimously given Mr. Coomber by the Fruit Committee. The tree is growing in a house about 25 feet by 18 feet, and was planted about eight years ago. It is evidently worked on a very suitable stock, probably that of the Pershore Plum, which from my own experience is one of the best stocks for the Bellegarde Peach, stock and scion growing at an equal rate.

"The iron-trellis on which the tree is trained forms about a fourth of a circle, and the upper part is about 6 feet from the ground. It is a better form of trellis than the flat, as the compulsory curvature of the branches tends to keep the growth of the upper shoots somewhat in check, thus the sap is not so much diverted from the lower branches, as in the case of the latter; moreover it is an easy matter to perform any required work on the tree, and other trees if worked on high stems can be planted on the back wall of the Peach-house, no shade being thrown on the heads of such trees." We shall give further details as to the Hendre later on.

With the exception of a few drops in the middle of July, no rainwater at all has come through the latter gauge for nearly sixteen weeks. Since the 10th the atmosphere has been calm and very dry, while there has been a splendid record of bright sunshine during the same four days, the average daily duration being nearly 12½ hours. *E. M., Berkhamsted.*

NOTICES OF BOOKS.

FÖRSTBOTANISCHES MERKBUCH. By Prof. Dr. Conwentz, Danzig (Gebrüder Borntraeger, Berlin).

THIS little volume is Part I. of a series of similar handbooks, and is published under the auspices of the Minister of Agriculture, and of Domains and Forests. Together with others of the same series, this notebook is to be distributed freely among the officers of the Government Forestry Department of Prussia. Though it does not pretend to be a complete guide to forestry, the *Merkbuch* is likely to do good work in calling attention to fine speci-

vegetation of Australia as a whole is highly differentiated from that of the rest of the world, Western Australia is more specifically Australian in this connection than any of the other colonies of the group." Dr. Morrison then passes on to notes on the native plants comprised in the principal natural orders, closing his paper with paragraphs dealing with poisonous plants and ornamental plants, the whole forming a useful contribution to the natural history of the country.

HANDBOOK OF BRITISH RUBI, by William Moyle Rogers. (London: Duckworth.) B. 1. 6d

THIS is a very acceptable Monograph of our common Brambles, from the pen of a gentleman possessing the greatest competence for the work. Those who have not made a special study of the genus are not competent to criticise such a book, but any student can gauge the general plan of the work and form an estimate of the manner in which the author has realised his plans. The author is one of those who splits up the half-dozen fairly well-defined groups into a hundred or more "species." Having gone so far, it seems difficult to understand



FIG. 36.—ANNUAL LARKSPUR, "BLUE BUTTERFLY."

DELPHINIUM BLUE BUTTERFLY.

ONE of the prettiest annuals we have seen lately was exhibited at a recent show of the Royal Horticultural Society in a pot by Messrs. James Carter & Co. Our illustration (fig. 36) shows the dwarf, compact habit of the plant, and its freedom of blooming. The colour of the flowers is bright blue. It is probably a form of *D. consolida*.

THE WEATHER IN WEST HERTS.

THE cold, wet, and sunless period, which had lasted ten days, came to an end on the 10th, when a complete change to fine, bright, and warm weather, took place. The change in the day temperatures during the week has been very considerable, the reading in the shade on two days at the beginning of it never exceeding 61°; while during the last two days the same thermometer has risen to, respectively, 82° and 81°. The nights, however, still remain rather cold for the time of year. At 2 feet deep the ground is now 2° warmer, and at 1 foot deep 5° warmer than is seasonable. During the ten days above referred to, 2½ inches of rain fell, which is nearly equal to the average quantity for the whole of August. Of this amount, 1½ inch, equivalent to 7 gallons on each square yard of surface of my garden, has come through the bare soil percolation-gauge, but none whatever has passed through the gauge on which short grass is growing.

mens of indigenous trees, in registering an inventory of trees that are noteworthy on account of their size or history, and in noticing such shrubs, trees, and plants as are worthy of preservation among the many changes that take place in forests, as elsewhere. The book relates only to the district of West Prussia, and contains a map and about twenty illustrations of trees that are characteristic of the country.

THE VEGETATION OF WESTERN AUSTRALIA.

THE first volume of the *West Australian Year-Book* for 1898-99, by Malcolm A. C. Fraser, contains a communication, by Dr. A. Morrison, on the "Vegetation of the country." In the introduction he says that "The flora of Western Australia is distinguished for its richness, the beauty of its flowers, and, in many instances, the singularity of the forms composing it. . . . While the vegetation of the tropical region is not specially distinguished, alpine vegetation, on the other hand, is entirely wanting, on account of the absence of high mountains and the permanent streams and still waters usually associated with them. The remarkable profusion that characterises the flora is, therefore, to be sought for in the temperate latitudes, and is found in the south-west division of the colony, or within the triangle formed by a line from about the mouth of the Murchison river to the neighbourhood of Esperance, with the west and south coast-lines between these two points. . . . While the

why the author did not go further and give us 200 species. Of one thing we feel sure, that the larger the number of species made the more difficult it is to discriminate between them; and, further, that the opinion arrived at in one season is very likely to be modified in the succeeding one. As the author says of *R. Balfourianus*, "there are undoubtedly intermediate forms connecting it with *R. corylifolius*, and these are often most baffling to the student, even with the living bush before him." The enthusiastic "batologist" must surely regret that he is not likely to live long enough to see which of these variations will survive and adapt itself to the conditions under which it is placed; that is a pleasure for the botanist of succeeding æons. The hybrid produced by Mr. Culverwell between the Raspberry ♀ and the Strawberry ♂, has been identified by some batologists as *R. idæus* var. *obtusifolius*, which is the same as Babington's *R. Leesii*. This being so, it seems that Mr. Culverwell has produced artificially the same form that has originated naturally, as has been done so often of late with Orchids. The white Raspberry of our gardens is referred to *R. idæus*, *B. asperimus*, in which the setaceous prickles [or as the author abbreviates them "prk"] or strong bristles are very crowded and tawny, instead of purple, and the ripe fruit amber-coloured. Another garden variety is *R. laciniatus*, a handsome form, common in the vicinity of towns, and producing fruit of superior quality. Mr. Rogers denies this

plant the rights of British citizenship, but is unable to say whence it was derived.

We have alluded in passing to the abbreviations used by the author, and refer to them again to suggest that in another edition they be materially diminished in number:—*acic.*, *bas.*, *et.*, *pan.*, *prk.*, *prklet.*, *st.*, are puzzling, and there is no abbreviation of the reader's time if he have to turn to the explanation whenever he meets one of these condensed statements in the author's pages. The increased space required would not be very alarming.

FRUIT REGISTER.

THE LOGANBERRY.

THIS fruit has ripened here for the first time this season, and is likely to be appreciated as a dessert fruit. It comes in after the bulk of the Raspberries are over, and resembles that fruit in appearance, but is more juicy, and of greater length; the flavour partakes of the Raspberry and Blackberry, as might be supposed, and is hybrid between these kinds of plants. The fruit should not be gathered for consumption until it turns of a dark colour, as it has a very small amount of flavour previously. My plants were weak when I received them in November, 1898, but they have increased much in strength since then, and now the young growths measure 5 feet in length, which leads me to hope for even better results another season. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

NURSERY NOTES.

MESSRS. WEBB & SONS' TRIAL GROUND.

A DISTINGUISHED party, chiefly of Professors from various Universities and Colleges of the kingdom, paid a visit of inspection on Thursday last to Messrs. Webb & Sons' Kinver Trial Grounds and Seed Farms, where were to be seen a very extensive variety of Wheat, Barley, and Oats from foreign countries, growing side by side with the most perfect examples of new kinds, the result of cross-fertilisation and high selection this country has hitherto produced. The party consisted of Professor Parry, University of Wales (Aberystwith); Professor Blundell, Royal Agricultural College, Cirencester; Professor Wallace, University of Edinburgh; Professor Middleton, Durham University; Dr. Hunter, Edinburgh; Mr. Biffen, botanist, Cambridge University; and Professor McAlpine, Glasgow, besides several practical agriculturists. Unfortunately, heavy soaking rains prevailed all day, but this did not damp the ardour of the investigators, who gave a comprehensive examination into the interesting features of plant-culture laid open to view. There were no fewer than 155 varieties of Corn alone, the largest collection, as one of the professors declared, to be found in any trial-ground in the kingdom. The utility of high selection was abundantly proved by finer ears and stouter straw having been imparted to some of the old Wheat, such as Golden Drop. But the marvels wrought by cross-fertilisation were equally apparent, especially in an entirely new variety of white Wheat, whose plump corns have only the thinnest skin-coating; while they are so close set in the heads, that in all probability it will prove a general favourite when brought into general use. Among the seventy-five sorts of Oats which came under view there was not one that apparently surpassed in heavy yielding the Bosworth variety, but Dr. Hunter gave the palm to Newmarket, on the ground of its superior milling quality. According to the Dalmeny experiments, he said this Oat had surpassed all other kinds in yielding the greatest weight of flour. Some of the Barleys from countries so far distant as China and Egypt were curiosities, and the "naked" varieties were regarded with interest; but of the best malting varieties Kinver Chevalier

could only be surpassed by an entirely new sort, as yet unnamed, which some pronounced to be, in all probability, the Barley of the future. Some thirty-one trials of Swedes and twenty-three of Mangolds also proved of great interest.

GLOUCESTER FRUIT MARKET.

IN response to an application from the Gloucestershire Chamber of Agriculture, and several large fruit growers in the county, the Gloucester Corporation decided to open a fruit and vegetable market in the city. The first sale took place on Monday, and was pronounced on all hands to be an encouraging success. There were close upon 200 baskets of fruit, and a few lots of vegetables, and buyers were present from Cardiff, Birmingham, Cheltenham, Tewkesbury, Stroud, and other large centres, whilst local fruiterers were well represented.

The market was formally opened by the Mayor, who expressed the pleasure he felt at seeing so many buyers present. The Corporation, he said, were determined to spare no pains to make the Market a success; and he hoped before long it would be found necessary to increase the present accommodation for the large consignments of fruit that he was confident would be sent into the city. Mr. Sandal, the auctioneer, before commencing the sale, said he saw no reason why a Fruit Market in Gloucester should not be well supported. Gloucester would compare favourably with Hereford, Evesham, and other places where these sales were, and had been a success for years past. Gloucester was centrally situated for buyers; it was a good fruit centre as well as an excellent distributing place, and there was no doubt if it were well supported by growers, buyers would patronise it. One would think that growers would find it to their advantage to send their fruit to a market such as this rather than sell their orchards as they stood, or send their fruit to a distant market, and risking what they might get sent them in return, and having to pay carriage. He thought, too, if growers would pay more attention to the selection of their fruit, better prices would be realised. He would also like to point out that growers would be studying their own interests in seeing that the fruit was fairly and evenly packed, as the market would gain a reputation for fair dealing.

The first hamper of Apples, 74 lbs., realised 6s. 3d.; the second, 84 lbs., 3s. 1d.; five lots of Keswick Codlins, each containing 50 lbs., sold for 3s. 7d. per basket; and a similar consignment of Quarrendens were knocked down at 3s. 1d. each hamper. The top price realised for Plums was 9s. for a hamper containing 90 lbs. A fine sample (56 lbs.) of Jargonelle Pears sold for 9s. 9d.

LAW NOTES.

THE GARDEN OF "EDEN" IN THE COUNTY COURT.

AT Lancaster County Court on Monday, Aug. 13, Elizabeth Charlotte Pape, wife of Robert Pape, Inland Revenue Collector, Morecambe, sued Edward Armstrong Jowett, commercial traveller, for dilapidations in respect of "Eden House," Bare. The chief item in the claim was respecting the garden, which comprised about a thousand yards of kitchen, flower, and fruit-garden. Plaintiff made a special stipulation on letting the house that defendant kept the garden in good order. Instead of that, he let it go into a wilderness, never mowed the lawn, and it took a gardener and a labourer over a fortnight to put the garden in order. Two cartloads of weeds were taken away, and they had so got the mastery it took a "pick" to dislodge them, and they had to trench them in. Sixty yards of the walks which were obliterated had to be re-soiled at the edges. Defendant said he spent all his spare time and his week-ends in the garden, which was in a better state when he left it than when he took possession. Instead of the claim for £8 9s., plaintiff got 38s. damages.

THE FINLEY LAWN-RAKE.

"THE common garden-rake is an ancient implement, and has changed but little in principle of construction throughout the ages, although the form has been frequently modified to meet specific requirements. The rotary lawn-rake, however, is a complete departure from the time-worn ideal, and affords another illustration of the inventive genius of modern days. As in many other familiar cases, the new machine is simplicity itself, and when one looks upon it for the first time expression is given to the trite phrase, 'It's a wonder somebody did not think of it years ago.' The manner in which the idea was stumbled upon is commonplace.

Mr. C. E. Finley, of Joliet, Ill., the inventor, spent his days in the city, retiring for rest and recreation to his suburban home, where much of his leisure time was devoted to amateur gardening. Saturday afternoons he mowed the lawn, and on Sunday mornings raked up the grass in the old-fashioned way. It was tiring work in the hot summer months, and Mr. Finley often thought there should be some easier and more expeditious method. It was an unusually hot Sunday morning, as the inventor tells it, when the idea occurred to him, 'Why not a lawn rake on the carpet-sweeper principle?' He had it. The rest is simply the story of drawing designs, constructing patterns, making a model, tests, improvements, &c., until a company was formed, special machinery devised, and the invention was placed on the market a few months ago.

As already hinted, the principle of construction in the new rake is that of the carpet-sweeping machine. The teeth, as shown in fig. 37, p. 135, pick up the lawn debris—including loose grass, leaves, twigs, litter, paper, Orange and Banana skins, Peanut shells, windfalls from fruit-trees, and even stones as large as Chestnuts—and the blades in which the teeth are set, being rotary, cause a suction which carries it to the capacious receiver. The parts are few in number, strong, and well put together. The machine is so light, that a moderately strong boy can do as much work on a lawn with it in one hour as the average man can do in four with an ordinary rake.

Many well-known men in the trade have already tested the machine, or seen it in operation, and it meets with their general approval. There should be a future for it in public grounds, parks, and cemeteries, as well as in private establishments." *The American Florist.*

HOME CORRESPONDENCE.

WET AND COLD SUMMERS.—Most wet summers are cold, but some are hot. Most cold summers are wet, but some are dry. Here we call everything above average wet, or hot; everything below average, dry or cold. In the accompanying table are grouped together in ten columns (years ending with 0, with 1, and so on), all years with summers either wet, or cold, or both. The wet summers that were hot (5) are indicated by brackets. The cold summers that were dry (12) are underlined:—

	0	1	2	3	4	5	6	7	8	9
1840 1841	...	1843	1844	1845	...	...	1848	...		
...	1851	(1852)	1853	1854	1855	...	...	...
1860	...	1862	1863	1864	(1865)	1866	1867	...	1869	
...	1871	(1872)	(1873)	...	1875	...	...	(1878)	1879	
1880 1881	1882	1883	...	1885	1886	...	1888	1889		
1890 1891	1892	...	1894	...	...	...	...	...
Additional of 3	4	5	5	5	4	5	2	1	3	3
	...	14	15*	14	14	11	8	6*	7	...

We may note great contrasts in different parts of the table. Thus, the groups of years ending, 1, 2, 3, and 5, have each five wet or cold (or both wet and cold) summers out of six; while the group of years ending 7 has only one out of six; and the group ending 6 has two. Taking 1, 2, and 3,

together, we find fifteen of those summers out of eighteen: taking 6, 7, and 8, together, only six out of eighteen. The years ending 0 have a special interest at present. We find four out of the six summers wet or cold, or both. We might construct this statement: In each decade, since 1840, one or other of the years ending 1 and 2, has always had a summer wet or cold, or both; and in a majority of cases both years have had such summers. The same may be said of years ending 2 and 3. Do these facts point to a periodicity of about ten years? Or will the balance be redressed in another sixty years? In any case, it will be interesting to see how future summers compare with the past in this respect. *Alex. B. MacDonall, F.R.Met.S.*

PEA FERTILISATION.—My old friend, Mr. Benjamin Harrison, of Ightham, of palaeolithic implement renown, and a keen observer, writes me as follows, which I think well worthy of noting:—"A humble bee was walking across my shop-floor on Wednesday, I carefully picked it up and placed it on some everlasting Pea blossoms; he soon became active, and seemed intent on eating his way through the lower wings. I watched his attempts at burglary for some time, presently he succeeded and was happy. This accounts for many holes drilled through on many other flowers. Close by settled a hive-bee, and his action was totally different: he centred his attention on the standard, and began to suck away to his heart's content, at the same time trampling away on these lower wings as a platform. Presently, as if alive, a club-shaped yellow object made its way over the bee's back. It was so sudden in its movements it seemed alive, and creeping over, directly Mr. Bee removed the pressure, back it coiled again. I watched several more, and all the same. Some years since, in reading Lubbock's book, I noted the method of fertilisation, but nothing was said of the movement of pistil and stamens which here rose to view." *Chas. T. Drury, F.L.S., V.H.M.*

A QUICK CROP OF PEAS.—One curious effect of the extreme heat last month has been the rapidity with which Peas have filled their pods. A row of Sutton's Early Giant Marrow was sown on June 20, and produce was ready for gathering on August 10, fifty-one days after sowing; the same variety sown on March 9 was ready for use July 2, a period of 117 days, which was not unusually long considering the cold spring. In fact, I consider this Pea one of the quickest and most satisfactory as an early Pea. Laxton's Standard (a good hardy variety seldom seen now) and Telephone, sown on June 20 by the side of the above, will not be ready for several days. The mean temperature for July was the highest of any month here since August, 1893, but the mean temperature of the earth at 3 feet was slightly exceeded in August, 1899. Notwithstanding the great heat in July, vegetables of all kinds are more satisfactory here than they were in 1898 and 1899, and especially so in regard to Peas, an average amount of rain having contributed largely to this result. *W. H. Divers, Belvoir Castle Gardens.*

DIGGING AS A RECREATION.—Our tool-makers must prepare for a big run on spades and forks, for has not a bishop—indeed, no less a personage than the Lord Bishop of London—actually been recommending that boys at school should practice digging, for at least one hour daily, as recreation? It is indeed a feature of the age when a bishop condescends to become a horticultural instructor; still it is worthy of note, that his lordship did not strip off his cassock, roll up his shirt-sleeves, and with a spade or fork set the Hampton schoolboys an example. I can well imagine the pleasure which must have beamed on the face of our old friend, Mr. Denning, an active governor of the Hampton school, when he heard his diocesan thus descend on the uses and pleasures of digging. It was so much in keeping with his own vein of practical thought. But we may well wonder how far the school governors will act up to the bishop's suggestion, and how far the schoolboys will accept with satisfaction or with grimace the opportunity to learn the laborious art of digging. I am but a humble and very non-ecclesiastical Dean, but I have long been ahead of the bishop in advocating the practice of digging and trenching, not only for lads, but for young men, who would find in such recreation something profitable as well as healthful, whilst they waste enormous energies in athletic sports and pastimes,

practically making of such sports a fetish, that do little physical good, and not a little moral harm. To all these an hour's trenching or digging before breakfast each day would in time represent to the nation millions of pounds profit. In respect of boys, our continuation-school gardens in Surrey constitute practice-grounds in the art of digging and gardening generally, of which most probably the Bishop of London knows nothing. Clearly, in other and much more practical directions, the Right Reverend advice has been forestalled. *A. D.*

LATHYRUS MAGELLANICUS.—In my note on this plant, for which you did me the favour to find room on p. 114, I said that it probably was first found near Strait Le Maire. This seems to be a mistake; as I have since writing the note had an opportunity of consulting Walter's *History of Anson's Voyage*, and Thomas's *Journal of the Centurion*. I find from these that the squadron had no communication with shore from the time of leaving Port San Julian on February 27, 1741, until reaching Juan Fernandez on June 11 in the same year. Port St. Julian is on the east coast of Patagonia, 500 miles north of Cape Horn. The *Centurion* remained at anchor there for nine days, and explored the land searching in vain for fresh water and salt. It must have been there that the Pea was found. The circumstances mentioned by

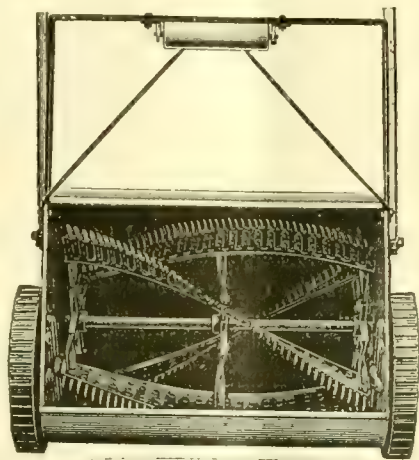


FIG. 37.—THE LINLEY LAWN-RAKE.
(SEE P. 134.)

Miller were probably communicated to him personally by Lord Anson's cook, who brought the seeds home and gave them to Miller. I may add that this long-coveted *L. magellanicus*, or Lord Anson's Pea, has often been offered in seed and plant catalogues, the species sent for it being *L. tingitans*, but more frequently *L. sativus*, an annual with bright blue flowers, native of the south of Europe, and cultivated for fodder in Egypt and India. The meal from the peas of *L. sativus* is poisonous, and being imported mixed with other meal has more than once proved fatal to horses. *C. W. Dod, Edg. Hall, Malpas.*

THE NEW BRAMBLEBERRY.—Newspaper scribes, fearful of an editorial earthquake if they in the dull season brought to life once more the big Gooseberry, or the ghostly sea-serpent, have found a new and startling wonder in the new Blackberry. How much this interesting fruit which, by the by, though a berry is not black, owes to its intrinsic merits, or how much it may owe to its appellation for its recent popularity, it may be difficult to say, but there can be no doubt that in dubbing it after that somewhat wild and warlike eastern potentate The Mahdi, Messrs. Veitch & Sons did the fruit a good turn, and the only regrettable fact now is, that plants cannot be put into commerce for some time hence, as ere then the fame of the novelty may have dwindled. It has been amusing reading this of the general press, concerning the new Mahdi, and specially so because one incorrect statement made one day would be corrected by another, as in each one writer gravely told his readers that the fruit would not be ripe till September, evidently oblivious of the fact that the

whole stir about The Mahdi arose from an exhibit of ripe fruit by Messrs. Veitch & Sons, at the Drill Hall in July. It is all the more odd that the certificate given to the guest should have been granted last year, when no penny-a-liner spotted the wonder. However, we seem at last to have obtained one good thing from out of what seem to have been the often made cross between the Raspberry and Blackberry, and as the berry of The Mahdi is large and juicy, and of a deep claret hue when ripe, it will hardly be confounded with others. Those who have not this *lacinatus* should get it, and then when ready for issue, The Mahdi, that needs somewhat similar treatment. These are two good things, and very likely in time we shall hear of some others that will be well worthy of cultivation. *A. D.*

A MODE OF HELPING THE ROYAL GARDENERS' ORPHAN FUND.—If any of the readers of the *Gardeners' Chronicle* would like to have some good varieties of Strawberries I should be glad to send runners to them at 2s. per 100, post-free. The proceeds will be forwarded to the charity named. The varieties are Royal Sovereign, Sir Charles Napier, Sir Joseph Paxton, President, Noble, Newton Seedling, Miss Knollys, Louis Gauthier, Latest-of-All, Auguste Boisselot, Auguste Nicaise, and Dr. Moreau. The postage and the package will cost in each case about 1s. I should be very glad if I could manage to pay the postage and cost of package. 15,000 plants are to be thus distributed. *D. H. Davies, The Gardens, Darren Court, Neath, South Wales.*

WHY SWEET PEAS ALONE?—We hear a great deal about too many Sweet Peas, and demands are uttered that the number be reduced; but is the Sweet Pea alone open to some process of reduction? I think the culinary Peas require it ten times more. I have just totalled up the list given in one of the leading wholesale seed catalogues, and find it amounts to some 120 varieties, with a possible increase to 200, if some of the leading retail catalogues were put under contribution. How many of these are Telephone, or Duke of Albany, Stratagem, or Ne Plus Ultra, under different names? Fifty culinary Peas would not show a tenth part of the variation found in the same number of Sweet Peas; and culinary Peas grow in numbers much more rapidly than does their fragrant relatives. It would not be difficult to make up a list of fifty varieties of Broad Beans, but they cannot be distinct; and when we come to Cucumbers, the list is appalling in its length, while it seems impossible to enumerate more than two or three distinct types. I can make up a list of fifty varieties, eight of which at least were sent out as new varieties in the present year! The Fruit Committee of the Royal Horticultural Society go on making Awards of Merit to Cucumbers year after year, but they are not, and cannot be, distinct. I was at a flower show a few days ago where there was a class for a brace of Cucumbers, and about ten brace were staged; as far as I could see, they all bore different names, but they were all exactly alike in type, and all the judges could do was to select the most symmetrical consistent with fitness for table. If members of the Fruit Committee are ambitious to apply the pruning-knife to lists of flowers, let them first turn their attention to some productions with which it is supposed they are more fitted to deal. And then the Melons, and a Melon appears to gain an Award of Merit at the rate of nearly one a month. I can make up a list of sixty, and nearly a dozen are new of this year. There is a little more scope for variation in Melons than there is in the case of Cucumbers, but the different types might be counted upon the fingers of one's hand, yet they go on increasing in number with a startling rapidity. It is even worse with Tomatos, for the list totals up eighty assumed varieties. Can there possibly be a dozen distinct types? If there are this number distinct, some of them must be greatly multiplied. I find a list of three dozen garden Turnips, seven varieties of Parsnip, ten of Parsley, and as many as forty-two varieties of Onion, exclusive of the Tripoli, Lisbon, and Silver-skinned sorts; Cos Lettuce thirty, Cabbage-Lettuce more; over thirty Celeries; Broccolis and Cabbages can be enumerated almost by the hundred, and they vary so little. Are there not other flowers of older standing than the Sweet Pea whose varieties are much more numerous?—the Begonia, Carnation, Dahlia, Fuchsia, Pelargonium, and

others. But I hear no proposal to reduce the numbers. Why the Sweet Pea alone should be singled out for the thinning process—the most easily grown, and the most popular of all of them, I can only conjecture. In reference to the prevalence of synonyms, those most to be pitied are the wholesale seedsmen. They are compelled by the requirements of their trade to publish in their catalogues long lists of names, a considerable proportion of which they know to be synonyms. They can take three or four, or half-a-dozen so-called varieties of Peas out of the same sack. Any newly announced vegetable is subjected to trials on their well ordered trial grounds. A new Pea, which is only a selected stock of some well known type, is tested by them, and its character is noted. The wholesale seedsmen has to consider his customers, and he is practically compelled, in order to keep his connection together, to place the synonyms in his list at an advanced price over the type. The trial ground of a wholesale seed-house affords an excellent opportunity for selecting the best stocks: they are always selecting and re-selecting; and they are able to apply the best of tests to any reputed novelty. This credit is not always given in the right quarter, but it is nevertheless abundantly due. *Lathyrus*.

HUMAN OBSTACLES TO FRUIT AND FLORAL EXHIBITORS.—These as held have been emphatically made, and consequently may be marred, by man. Generally one or more leaders, governors, or secretaries, run such societies successfully for years—it is often observed to me by such of them as the Secretary and Manager of One-and-All, Mr. Greening and Mr. Waugh; and the Secretaries of the Royal Horticultural, National Rose, Caledonian and other societies. When Councils, members, Fellows, employers, and exhibitors, and the railways, carriers, and waggoners pull together, and the jurors are known as growers of experience and fairness, shows will generally prosper. Cheapness, rapidity and facility of transit for passengers, exhibits, and baggage, lay the solid foundation of success. No matter how good the fruits, flowers, vegetables, garden products are, if they cannot be delivered, decorated, shown on a certain table at a specified time, at a certain cost, the exhibitor cannot pay his way. A very slight rise in prices of transit will often keep the best exhibits at home. Yes, a thousand pities, no one will be the happier, the richer, but the public the poorer, much. Great efforts have been made by Mr. Greening and his staff to keep up the old cheap fares for showers, singers, visitors, at the One-and-All shows, sports, concerts, &c. These efforts seem to have partially failed this year, but they will soon be renewed with greater energy. The general daily and monthly press have been thoroughly aroused, and have taken the side of popular trips at the cheapest possible rates for all educational and cultural agencies. And then horticulture, which now has somewhere about twenty newspapers a week, is taking this matter of cheap fares, and popular concerts, and other great *fêtes*, in hand, and are not likely to allow the matter again to drop until their charming craft and ennobling pleasures are free from grasping monopolies, which impoverish others, whilst they are utterly incapable of enriching themselves. *D. T. Fish*.

LATE CHERRIES.—Referring to "A. D.'s" remarks in the *Gardeners' Chronicle*, August 11, the Cherries that he saw at Kingston Market were probably Turks, or Turkey Heart, which have grown out this year to a remarkable size. Turkey Heart is quite distinct from Noble, the former being quite a week earlier, and not nearly the size of fruit. *W. Ray & Co., Teynham*.

STANDARD ROSE-TREES.—Rose-trees with large heads, when in full bloom, growing in suitable places in lawns, &c., have a very pleasing effect, and should be grown more extensively than they are at the present time. Crimson Rambler, Aimée Vibert, William Allen Richardson, Réve d'Or, Reine Marie Henriette, and many other of the Teas, when budded on the Briar Stock, from 4 to 5 feet high, if kept moderately thinned, soon make fine heads, and the long rambling shoots bending towards the ground as they lengthen, in due time flower most freely. When large heads are wished for, the trees should be planted in a light, open spot, so that the head does not grow one-sided. Very little pruning should be afforded the weak and blind shoots, and superfluous old wood

should be removed. I often think the knife is too freely used upon Roses, and the heads are too much restricted either for appearance sake, or the welfare of the plant. More shoots should be preserved. *H. Markham, Wrotham Park Gardens*.

THE PENSHURST LEECH.—I have just been reading the interesting account by a "Sussex Naturalist" in last week's *Gardeners' Chronicle*, p. 102, of the animal recently sent from there to the editor. I distinctly remember sending to the *Gardeners' Chronicle* from Redleaf some ten or twelve years ago what I take to be the same thing, and as nearly as I can remember (writing from memory only) the reply was, that it was supposed to be a tropical worm, or something to that effect. The description of the one recently seen quite agrees with the one I sent, and during my twenty years at Redleaf, both before and after that time, I had occasionally found them, so that it is not by any means a recent introduction to this country. I have an idea that it will be found to be a flesh-eating animal, like some of the slugs, as I once found one that had partly eaten a common earth-worm; at any rate, it was in such a position that would lead one to suppose that such was the case. That this leech is not at all uncommon, I expect will be found to be the case, as I have frequently found them here in the houses, not always among Orchids, but among Ferns and other moisture-loving plants, generally under pots, or among the crocks in the daytime; but at night I have seen them on damp walls and paths. That they do no injury to plants, I feel certain, as I have never once seen any damage caused by them. Only a few weeks ago I found a small one, and dropped it into a tank containing gold-fish; they made the usual rush as when a worm is dropped, but apparently "Trocheta" was not to their taste, as they at once dropped it, and gave it a wide berth afterwards. *W. H. Holah, St. Mary's Nurseries, Richmond, S.W.*

SHORT GRASS AS A MULCH TO CARROT AND ONION-BEDS.—While walking through the garden at Freeland, near here, in company with the gardener, Mr. Sharp, the other day, I was much struck with the vigour of the spring-sown Onions and Carrots, and the absence of the dreaded grub in them; and on asking what means were taken to prevent it, Mr. Sharp said that he saved all the short grass from the lawns, and put it into a heap, and when half-rotten, scattered it between the rows of his crops of Onions and Carrots, with the result that there is not a grub to be seen in the whole lot; and he assured me it was an excellent thing to put round Broccoli, Savoys, &c., to prevent clubbing. I may add, the grass-mulch is put on in the spring. *A. S. Cole, Moncreiffe Gardens, Bridge of Earn, N.B.*

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 14.—The meeting held on the above date was one of the smallest of the year hitherto both in regard to the exhibits and the number of the visitors. ORCHIDS were conspicuously absent; HARDY PERENNIAL PLANTS as CUT FLOWERS were few, and the *pieces de resistance* consisted of a pretty exhibit of *Campanula isophylla* Mayi, by Mr. H. B. MAY, and a noble *Nepenthes*, shown by Messrs. VEITCH.

FRUIT had the precedence; an exhibit of cordon Gooseberries and dishes of Apples and Pears by Messrs. J. VEITCH & SONS, LTD., Grapes from Lord STRAFFORD's garden at Wrotham Park, and some London-grown fruit from the neighbourhood of Regent's Park, calling for the greater amount of comment.

Floral Committee.

Present: W. Marshall, Esq. (in the Chair); and Messrs. O. Thomas, C. T. Druery, G. Nicholson, H. B. May, R. Dean, J. Walker, J. F. McLeod, J. Fraser, W. Bain, J. D. Pawle, C. E. Pearson, H. Selfe-Leonard, C. E. Shea, G. Gordon, J. W. Barr, and E. T. Cook.

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, had a capital exhibit consisting of 20 feet of tabling, set out with *Campanula isophylla* Mayi, which well showed the capabilities of the plant under pot culture, as a balloon trained, and as a basket and vase plant. The different specimens were very finely bloomed. The table was set out with Maidenhair Fern, Eulalias, and Dracaenas (Silver Banksian Medal).

Messrs. R. WALLACE & Co., Kilnfield, Colchester, showed a

choice assortment of bulbous plants, and hardy herbaceous perennials as cut flowers. There were remarked *Coreopsis grandiflora*; *Campanula grandiflora*, and the faint blue form called *alba*, which is not white; *Delphinium speciosum glabratum*, of a dark blue colour; *D. Zalii*, primrose-yellow coloured flower; *Montbretia sulphurea*, *Gaillardia maxima*, *Lilium Thunbergii*, *L. auratum*, *L. longiflorum*, with white margins to the leaves; *L. superbum*, and others; several *Crimums*, *Heimerocallis aurantiaca* major, a fine orange-coloured, large blossom; *Rudbeckia Newmanni*, and *Gladiolus* of various sections (Silver Flora Medal).

Messrs. KELWAY & SONS, Langport, Somerset, staged about 130 spikes, most of them furnished with large and numerous flowers (Silver-gilt Banksian Medal).

Mr. S. MORTIMER, The Nurseries, Rowledge, Farnham, Surrey, showed four dozen Cactus Dahlias in fine style. We noted the dark crimson *Regulus*, Charles Woodbridge, and Harry Stredwick; the yellow Mrs. Crowe, and a seedling; salmon-coloured *Exquisite*; mauve *Mary Service*; buff *Britannia*; purple *Emperor*; and scarlet *Stella* and *Lucius*. These blooms were arranged on ordinary show boards. A number of varieties were shown in fan form in glasses, and among these were noted Alfred Vesey, cherry-red; Mrs. W. H. Luscombe, light purple, with white central florets; and Major Tuppenney, scarlet as regarded the outer florets and yellow as to the inner ones. Sixty blooms of show varieties were likewise shown which were rather below full size although in most cases the blooms were perfect in form. They consisted chiefly of old favourite varieties. Mr. S. MORTIMER showed a yellow Cactus Dahlia, also the varieties *Monarch* and *Herbert Mortimer*, but none received recognition at the hands of the committee.

Mr. G. W. PIPER, nurseryman, Uckfield, Sussex, showed a quantity of his Tea-scented Rose *Sunrise*, the blooms being inserted in various devices.

Messrs. DOBBIE & Co. had a pretty exhibit of *Pentstemons*, *Antirrhinums*, African and French *Marigolds* in several varieties, including selfs, striped, and edged flowers. They likewise showed the "Scotch" *Marigold*, with simple, slightly reflexed florets, a glorified common *Marigold*. The *Pentstemons*, seedling, a light crimson flower; *Malamore*, and *André Lebon*, deep crimson; *Auguste Cain*, crimson, were pretty varieties.

Messrs. H. CANNELL & SONS, Swanley, Kent, had 13 yards of tabling, furnished quite lavishly with bouquets of *Asters*, including blooms of most of the sections into which the China Aster is divided. Specially good were *Jewel* of the giant section, and of the *Pæony* section, *Perfection*, *Emperor*, and others. The collection of blooms was a very good sample of the fine quality of English saved seed; the whole being raised from seeds saved on Messrs. CANNELL's seed farm at Eynsford. In this instance native seeds are quite equal to German or French. This firm showed also *Nemesia compacta alba*, a plant with pure white flowers; and *Godetia Pigmy* "Spotted Carpet," a white flower with crimson spots at the base of the petals (Silver Flora Medal).

J. T. BENNETT-POE, Esq., Holmwood, Cheshunt (gr., Mr. Downes), showed a group of plants of *Browallia grandiflora*, a plant once found in almost every garden. The flowers are blue with a white centre, and in shape like those of an *Achimenes*.

Messrs. FRANK CANT & Co., Braiswick, Colchester, showed bouquets of *Roses* of the so-called "garden" section, very pretty and very sweet. We remarked the varieties *Boule de Neige*, white; *Papa Gontier*, rose; *Cramoie Supérieure*, crimson; *Madame Abel Chatenay*, rosy-buff; *Madame Pernet Ducher*, white; *Bardon Job*, deep crimson; *Gruss aus Teplitz*, light crimson; *Gustav Regis*, fawn; *Camoens*, pink; *Crimson China*, Killarney, pink; and *Madame Resal*, cerise (Silver Banksian Medal).

Messrs. BARR & SON, florists and seedsmen, King Street, Covent Garden, W.C., exhibited a mixed group of flowers in season, inclusive of *Cactus-Dahlias*, *Gaillardias*, *Helianthus*, *Verbena* Miss Wilmott, soft pink; *Platycodon*, *Water-Lilies* in much variety; also herbaceous *Phloxes*, *Sweet Peas*, *Pentstemons*, *Crimums*, *Kniphofias*, and *Montbretias*.

Messrs. P. J. LOOYSMANS & ZONEN, Oudenbosch, Holland, showed *Aralia alata*, differing from the type only in the variegation which is visible on the margins of the leaves.

Sir TREVOR LAWRENCE, Bart., Burford Lodge, Dorking, gr., Mr. W. Bain, showed some of the finest *Gladiolus* we have ever seen grown in a private garden; these consisted of *G. Lemoinei-Fulgurant*, *G. Duchesne*, *Ferdinand Kegeljan*, *General Gallienne*, *Antoine Rivoire*, *Dubruel des Rhins*, *Le Chat Noir* (of the darkest shade of purple), *Demi Deuil* (half-mourning), *Georges Frick*, *Belle Alliance*, a singular-looking flower, of pale lilac, with the lower segments of the flower of a dark shade of purple, flamed with yellow; *Antoine de Thiery*, salmon-red, and large of size; besides several others (a Silver Banksian Medal).

Miss E. ARMITAGE, of Dadnor, Ross, Herefordshire, showed *Gypsophila The Pearl*, which blooms twice in the year. The flowers are small as in the type, and quite white.

THOMAS CUBITT, Esq., Edenbridge (gr., Mr. Hughes), showed a flaked *Carnation*.

FRED DAVIS, Esq., Woollass Hill, Pershore, showed some extraordinary double-flowered tuberous *Begonias* in crimson, rose, scarlet, and creamy-white. The plants were remarkable for strength and vigour, and the bold character of the foliage and flowers (Bronze Flora Medal).

Lady BREADALBANE, Taymouth Castle Gardens, N.B. (gr., Mr. W. Wright), showed *Thalictrum Chelidoni*, a plant with minute lilac-coloured flowers.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. De B. Crawshaw, A. H. Snee, H. Little, H. J. Chapman, H. A. Tracy, W. H. Young, J. Jacques, E. Hill, J. Douglas, and J. G. Fowler.

E. Bostock, Esq., Traxall Lodge, Stafford, showed *Cattleya Harrisoni* var. *violacea*, with nine well-developed flowers.

Sir WILLIAM MARRIOTT, Bart., Down House, Blandford,

Fruit and Vegetable Committee.

Present: P. Crowley, Esq. (in the Chair); and the Rev. W. Wilks, J. Willard, J. Cheal, W. Poupard, G. Kelf, W. Pope, H. Esling, A. Dean, S. Mortimer, G. T. Miles, G. Woodward, H. Markham, G. Wythes, W. Crump, W. Farr, H. Balderson, F. Q. Lane, G. Norman, and G. Bunyard.

Messrs. J. VEITCH & SONS, Ltd., Chelsea, made a telling exhibit with fan-trained, heavily-fruited Gooseberries. The

Mr. Geo. Norman, gr. to the Marquis of SALISBURY, Hatfield House, showed a dozen of the Royal George Peach, taken from a tree under glass, which has carried in all this year 300 fruits. The fruits were over average size. Mr. Norman said that this tree always crops heavily (Cultural Commendation). He also showed Hatfield Hybrid Melon, a small-fruited variety with a yellow rind which is slightly netted.

MISS ADAMS, South Villa, Regent's Park (gr., Mr. G. Kelf), showed a collection of fruit comprising generally fine specimens of Black Hamburg, Buckland Sweetwater, and Foster's Seedling Grapes, Barrington and Bellegarde Peaches, Green Gage, Reine Claude de Comte Athens, Golden Gage, Kirke's, Jefferson, Early Transparent, Cox's Emperor, and Green Gage Plums; four Melons, and a dish of Early Rivers Nectarine, a capital lot of fruit to be the produce of a purely London garden (Silver-gilt Knightian Medal).

Mr. H. Markham, gr. to Lord STRAFORD, Wrotham Park, Barnet, showed twelve bunches of Black Hamburg Grapes, four being the produce of a Vine planted 115 years ago, and the others were taken from Vines which the gardener has recently renovated, but of the same age. All of the bunches were equally fine in berry, and of the same jet black colour, those from the renovated Vines being slightly larger. The weight of the latter would be 3½ lbs. to that of the others 2 and 2½ lbs. (Silver Knightian Medal).

Messrs. DICKSON, Chester, showed Kidney Potato Pioneer, a smooth-surfaced tuber of the pebble shape, with very shallow eyes (Award of Merit).

Messrs. R. VEITCH, Exeter, showed Potato Beauty of Hebron, an old variety (Award of Merit).

Messrs. SHARPE & Co., seed growers, Sleaford, showed tubers of their variety Victor, an excellent sample (Award of Merit).

Mr. Dixon, gr. to Lord HCHESTER, Holland House, Kensington, showed fruits of Lord Napier Nectarine, and Violette Hâtive Peach.

Mr. GEO. CHARLTON, High Street, Morpeth, showed a quantity of berries of Gooseberry Victoria, a smooth red fruit.

The Royal Horticultural Society's Gardens, Chiswick, furnished Rivers' Early Damson (Cultural Commendation).

W. ROUFFEL, Esq., Harvey Lodge, Roupell Park, S.W. (gr., Mr. A. Russell), showed a number of dishes of Apples, chiefly early ripening varieties, as Lady Sudeley, Irish Peach, Red Astrachan, Duchess of Oldenburg, but no awards were made. Some Peaches from the same garden received a Cultural Commendation.

Messrs. CHEAL & SONS, Lowood Nurseries, Crawley, Sussex, showed a number of pods of Runner Bean Longpod of Leyden. These were very flat, being young, and measured 1 foot in length by 1 inch in width.

Messrs. J. WOOD, nurserymen, Penrith, showed a Butter-Bean named Wood's Centenary. The pods were of a light yellow tinge, and 6 inches in length.

Awards.

FIRST-CLASS CERTIFICATES.

Messrs. J. VEITCH & SONS, Ltd., Royal Exotic Nursery Chelsea, showed a cross-bred Nepenthes, Sir W. T. Thiselton Dyer, raised from N. Dicksoniana, crossed with N. Mixta. The pitchers have the capacity of about 1 quart when of full size. The parent species were likewise shown.

Messrs. J. VEITCH & SONS, LTD., Royal Exotic Nursery, King's Road, Chelsea, exhibited their Lælio-Cattleya Hermione, a flower of an uniform bright purple colour in all its parts, excepting the margin of the lip, which is of a deep velvety purple tint. The plant had five pseudo-bulbs and two flowers.

AWARDS OF MERIT.

Messrs. KELWAY & SONS, Langport, for Gladiolus Mrs. Wood, a rich purple self.

Lady BREADALBANE, Taymouth Castle, for Thalictrum Chelidoni.

Messrs. HUGH LOW & Co., Clapton and Enfield, showed Cattleya Eldorado Enfieldensis, an entirely white flower with the exception of the throat, which is yellow, and front of the lip purple.

PARIS EXHIBITION.

AUGUST 8.—Gladioli and Roses, together with fruits and vegetables, were the principal features of the show. Gladioli were superbly represented by Messrs. VICTOR LEMOINE & Son of Nancy, including a number of unnamed seedlings and a collection of blue or bluish varieties. M. GRAVEREAU exhibited specimens of a new race of Gladioli produced from gandavensis, but with cylindric spikes. The flowers are not large, but it is probable that this race will rapidly be improved. Messrs. VILMORIN, ANDRIEUX & Co. of Paris, showed a fine lot of Gladioli, a group of Vinca rosea, a collection of Celosias, a group of varieties of Begonia sempervirens, foliage plants, such as Amaranthus bicolor, tricolor, &c.; Nicotiana affinis, Solanum marginatum, S. Warszewiczii, S. grandiflorum, S. hematocarpum, Coleus, Zea, &c. From the same firm came also a superb collection of vegetables. Messrs. DUPANLOUP of Paris, and BILLIARD & BARRE of Fontenay, showed fine Cannas. Gladioli were also exhibited by Messrs. CAYEUX and LE CLERCQ of Paris, and BARETTE of Caen. The Roses of Messrs. DEFRESNE, LÉVEQUE, BOUCHER, SOUPERT & NOTTING, BONTIGNY, and many others were remarkable.

Orchids were not so well represented; as in the majority of preceding competitions the collection of M. CHARLES MARON, of Brunoy, was the most remarkable. It contained a fine Cattleya × Hardyana, C. Eldorado alba, C. × Haley = Mendel × Rex; C. × velutino-Lehmanniana, Lælio-Cattleya × velutino-elegans, having the petals broader than in th



FIG. 38.—RUBUS PHENICOLASII: COLOUR OF THE FRUITS ORANGE-RED.

(Plants and fruits shown at the Drill Hall on Tuesday, August 14, 1900. See Report, p. 136.)

showed Lælio-Cattleya Clouza = L. elegans × C. Warszewiczii, a handsome flower, partaking mostly of the Lælia parent.

R. I. MEASURES, Esq., [showed Cattleya Warnero-Bowringiana, a smallish flower of a pale purple tint, and tube of a deeper shade; also Cattleya Patrocinii (C. Leopoldi and C. Loddigesii).

M. FLORENT CLAES showed Odontoglossum crispum var De Sadeleri, a compact, almost circular flower, whitish in the middle, and faint yellow at the margins, with brown potting.

plants had been taken from the open ground and potted. They were good examples of this mode of cultivation. There were shown six dishes of Plums, including Burbank, a Japanese red fruit; Stint, and Early Prolific. Several dishes of early Apples, unblemished examples, were shown, including Early Red Margaret, Kerry Pippin, Early Joe, Mr. Gladstone, White Joanetting, Red Astrachan, Early Harvest, Early Strawberry, Early Russian, Summer Thorne, Lady Sudeley, Beauty of Bath, Irish Peach, Rivers' Early Peach, besides many early culinary varieties. A quantity of shoots and plants of Rubus phenicolasius in fruit (fig. 38) were shown (Silver Knightian Medal).

type, of a fine yellowish-brown tint, which resembles that of *C. velutina*. *C. × intermedia* Percevaliana, which does not show much of the character of the second parent, and is not likely to have a distinguished future; *Ladio-Cattleya × Cornelia*, with very broad flowers, &c.

The collectors of Orchids from M. BERT of Colombes, BERANEK of Paris, and RECHNER of Pontenay, did not contain any novelties.

We must not omit to mention the superb *Crassulaceae* and *Cactaceae* of M. SIMON, the fine foliage plants of M. DALIN, the large Palms of MM. DELAMIER, CHANTIN, and others.

M. GOUCHAULT, of Orleans, showed *Ligustrum sinense* and *L. ovalifolium* with variegated leaves.

M. PERRAULT & SON, of Angers, exhibited Agaves; M. NONIN, *Pelargonium peltatum* in variety; M. DESIRE BRUNEAU, of Bourg la Reine, a collection of *Hibiscus syriacus*; M. MILLER, of the same place, exhibited *Phloxes*. MESSRS. CAFFE & SON of Le Vésinet showed *Crotons*; MESSRS. DOVAL ET FILS had fine masses of *Asparagus Sprengeri*; M. REGNIER had *Carnations*; M. FÉRAUD had *Zinnias*; M. E. THIÉBAUT had *Petunias*; and M. J. SALLIER of Neuilly presented *Phlox Liervalli* with red flowers, striped with white. G. T. G.

KIRKCUDBRIGHT HORTICULTURAL.

AUGUST 10.—The annual show of the Kirkcudbright Horticultural Society took place on the above date in Bourtree Park. The entries were fully as numerous as last year, and, notwithstanding the recent heavy rains, the exhibits were in good bloom. MESSRS. KERR BROS., Dumfries, sent a fine stand of *Cactus Dahlias* and Sweet Peas for exhibition; and MESSRS. T. SMITH & SONS, Stranraer, were represented by an exhibit of their well-known *Roses*; while specimens were also shown from Mr. BLYTH, Castle-Douglas, St. Mary's Isle Gardens; and Mrs. HENDERSON, Glenauld.

Marigolds, *Carnations*, and *Cactus Dahlias*, were strong features in the cut flowers in the gardeners' class; the principal prize-winners being MESSRS. JAMES ALLAN, Arundel House, Dumfries; W. McCORMACK, Tarff; GEORGE BENSON, Milend, Borgeue; and JAMES HENDERSON, Ellenbank, Dumfries.

Fruit was exceedingly good, Grapes and bush-fruits especially. MESSRS. JAMES ANDERSON, JAMES DUFF, Threave; and G. ANDERSON, carried off the principal prizes.

The amateur classes were exceedingly good all over, the pot plants being excellent. Mr. W. McCORMACK again carried off the lion's share of the awards, Mr. R. MIDDLETON following him closely. R. J. A.

CASTLE ASHBY.

A VERY good show was held in the grounds of the Marquis of Northampton recently, at which the exhibits were excellent, and competition keen; in many cases upwards of nine and ten entries were staged in some classes. Peas and Beans, Potatoes and other roots, were above the average appearance.

The fine feature of the show was the table decoration that was done by the Marquis of Northampton. The table was decorated with a very costly set of china-and-gold fruit-dishes. The head gardener at Castle Ashby chose as his flowers *Salpiglossis*. The fruit consisted of Melons, Grapes, Peaches, Nectarines, &c. In addition to the table, he filled a tent with fruit and vegetables, besides Palms, *Acalypha hispida*, *Campanula pyramidalis*, with very fine spikes, the variety *Alba* especially; and small plants and mosses.

Unfortunately the rain, which fell heavily, diminished the pecuniary results of this excellent show. H. K.

ABBEY PARK FLOWER SHOW, LEICESTER.

AUGUST 7, 8.—The full force of the storm of Monday night, the 6th inst., appears to have spent itself over the Abbey Park, for of the six spacious tents three of them were laid low by the force of the gale, unhappily one of them after two or three fine groups had been arranged. One of the cottager's tents was so wrecked, that two of the large plant-houses were cleared of their contents, and many of the exhibits were staged in them. Every effort was put forth by Mr. J. Burn to repair the havoc wrought; it was a very trying time for him, but coolness and courage stood him in good stead. The staging could not be completed until considerably beyond the usual time, the judging was necessarily delayed, rain-storms drove the numerous visitors to the tents, and much of the judging was got through with extreme difficulty. Note-taking became a matter of almost practical impossibility.

In the Open-to-All Division, Mr. JAS. CYPHER, Cheltenham, was 1st with a superb group of plants, set upon a space of 160 superficial feet, arranged in his well-known style, Orchids and rich *Crotons* predominating. Mr. H. ROGERS, Leicester, was a close 2nd; but all the groups were remarkably good. Mr. H. BLAKEWAY, of Rugby, had the best six stove and greenhouse plants; and Mr. W. VAUSE, of Leamington, was 2nd. There was a class also for six Ferns, and for the best plant in bloom. Specimens are never a strong point at Leicester, as the value of the money prizes do not justify MESSRS. CYPHER and others in taking their plants at such heavy cost.

In the division for cut flowers, open, *Roses* formed a strong feature, but the dressing or manipulation of the blooms

appeared to be carried to such an extent as to largely change the character of some of the flowers; this is carrying dressing to inordinate limits. The reported practice of the National Rose Society in deducting points for dressing does not appear to be sufficiently drastic to prevent the abuse of the practice, any dressing that places the petals in an unnatural position should be made to carry disqualification.

MESSRS. D. & W. CROLL, Dundee, were placed 1st with thirty-six varieties; and they were run very close by MESSRS. A. DICKSON & SONS, Newtownards. With twenty-four blooms, Mr. HUGH DICKSON was 1st; MESSRS. A. DICKSON & SONS 2nd. Teas and Noisettes were of somewhat poor quality, and in the foregoing classes hybrid perennials largely preponderated. MESSRS. A. DICKSON & SONS had the best twelve Teas. In the class for twelve *Roses*, one variety, Mr. H. DICKSON came 1st, with well finished Mrs. J. Laing; and MESSRS. A. DICKSON had the best twelve Teas, one variety, staging Madame Hoste; MESSRS. D. & W. CROLL coming 2nd with Luciole. The best *Rose* in the show was Madame Eugène Verdier, shown by MESSRS. A. DICKSON & SONS.

The best twelve *Carnations*, bizarres and flakes, came from MESSRS. THOMSON & CO., Birmingham; the 2nd prize going to Mr. R. G. RUDD, Balsall Heath. With twelve yellow ground varieties, MESSRS. THOMSON & CO. were again 1st, and MESSRS. ARTINDALE & SON 2nd. Mr. RUDD had the best twelve white ground *Picotees*, staging clean pure blooms of high quality; and MESSRS. THOMSON & CO. were 2nd. There were classes for single blooms, and they were exhibited in bunches also.

Bunches of stove and greenhouse plants were placed in stands much too small for them, and consequently greatly crowded, and so lost very much of their effectiveness. Hardy annuals in bunches of twelve were also shown, and they also could be better displayed with advantage. There were some pretty bunches of *Violets*.

Hand and bridal bouquets were very good, the leading honours being divided between MESSRS. PERKINS & SON, Coventry, and JONES & SON, of Shrewsbury. The best collection of hardy flowers filling a space of 75 feet came from MESSRS. HARKNESS & SONS, Hitchin. There were classes also for show and *Cactus Dahlias*.

FRUIT.

The exhibits under this heading were remarkably good, but the white Muscat Grapes, though bunch and berry were alike fine, were somewhat green. Mr. J. H. GOODACRE, Elvaston Castle Gardens, was 1st with eight dishes, having Madresfield Court, Canon Hall Muscat, and Black Hamburgh Grapes, Barrington and Royal George Peaches, Lord Napier and Elruge Nectarines, and a Melon—an excellent collection. 2nd, Mr. J. DOE, The Gardens, Rufford Abbey, who had Madresfield Court, Muscat of Alexandria, and Foster's Seedling Grapes, and a fine Pineapple, Royal George Peaches, Lord Napier Nectarine &c. With eight dishes, Pine excluded, Mr. GOODACRE was again 1st, staging Black Hamburgh and Muscat of Alexandria Grapes, Royal George Peaches, Elruge Nectarine, Kirke's Plum, Lady Sudeley Apples, Melon, and Negro Largo Figs. Mr. McCULLOCH was 2nd, he had Madresfield Court and Muscat of Alexandria Grapes, Barrington Peaches, Pitmaston Orange Nectarines, Moor Park Apricots, &c.

With four varieties of Grapes, two bunches of each, Mr. A. McCULLOCH was 1st, having Muscat of Alexandria, Black Hamburgh, Madresfield Court, and Gros Maroc; and Mr. A. J. ELPHINSTONE, Nottingham, was 2nd. Mr. McCULLOCH had the best two bunches of Black Hamburgh, Mr. ELPHINSTONE was 2nd. With two bunches of White Muscats, Mr. W. DUNCAN, Bosworth Hall Gardens, was 1st; and Mr. McCULLOCH 2nd. With two bunches of white other than these, Mr. ELPHINSTONE was 1st with well-fruited Foster's Seedling; and Mr. DUNCAN 2nd, with Buckland Sweetwater. Any other black but Hamburgh was represented by excellent Madresfield Court from Mr. GOODACRE; Mr. R. SHAW, The Gardens, Garendon Park, was 2nd with Gros Maroc. There were classes for Peaches, Nectarines, Figs, &c.; also for bush-fruits, and Tomatos and Cucumbers were numerous shown.

VEGETABLES.

These were numerous and very fine. The special prizes offered by MESSRS. SUTTON & SONS, HARRISON & SONS, and others, brought excellent competitions, while the cottagers' produce was deserving of the highest praise.

Miscellaneous exhibits were of a very diversified character, and foremost among them was the representatives of topiary gardening contributed by MESSRS. W. CUTBUSH & SON, of the Highgate Nurseries. These were placed on the grass sward in the open, and attracted a large amount of interest. Mr. R. G. LANE, gr. to Mrs. G. H. ELLIS, Knighton, Hayes, had a very fine group of plants, such as rich-leaved *Codiaeums*, *Dracenas*, the variegated *Eulalia*, *Caladiums*, &c. MESSRS. HARRISON & SONS, Market Place, Leicester, had a large collection of cut flowers, very fine *Gloxinias*, Egg-plants, *Coleus*, &c. Mr. ROBERT PRINGLE, Leicester, had a stand of various cut flowers of good quality, such as *Carnations*, *Phloxes*, &c. MESSRS. J. CHEAL & SONS, Crawley, had collections of *Cactus*, *Pompon*, and single *Dahlias*, &c. Mr. WALTER BENTLEY, Belgrave, had a collection of *Carnations*, &c., in bunches. MESSRS. W. & J. BIRKENHEAD, Sale, had one of their elaborate collections of Ferns, showing great variety. Mr. WILLIAM SYDENHAM, Tamworth, had a representative collection of *Violas* in sprays, and several pretty floral designs showing how *Violas* and *Roses* can be utilised for indoor decoration.

MESSRS. R. W. PROCTOR & SON, Chesterfield, had an interesting collection of *Carnations*, mainly yellow grounds of a very attractive character. Mr. W. L. PATISON had a large

collection of *Violas* in sprays. Mr. S. MORTIMER, Farnham, had a large quantity of show *Dahlias*, and also *Cactus* varieties in excellent character for so early in the season. Mr. H. DEVERILL, nurseryman, Banbury, had a large bank of hardy flowers in considerable variety. Mr. B. R. DAVIS, Yeovil, had one of his unique collections of *Begonias*, many of the doubles of very fine quality. There were doubtless other trade exhibits, but the pressure of the crowd made it extremely difficult to get near some of them.

THE BRITISH PTERIDOLOGICAL.

DESPITE the terribly inclement weather which characterised the Bank Holiday generally, the annual meeting of this society was eminently a success, being well attended, and many exquisite forms of British Ferns being exhibited in the shape of fronds and plants. The meeting was held as usual at the Institute, Bowness-on-Windermere, Mr. C. T. DRURY, F.L.S., V.M.H., president of the society, occupying the chair. The usual formalities having been gone through, the chairman addressed the meeting, alluding to the loss the society had sustained by the deaths of Mr. E. J. Lowe, who had contributed so largely to the literature of the cult, and to the number of new forms; and of the Rev. G. Gunn, who only joined the society a year ago, and had been snatched away in the very prime of life. Passing from this sad theme, he proceeded to a far pleasanter one, taking the form of the presentation by the members of the society of a very massive handsome clock and a choice full tea service of china, accompanied by a beautifully illuminated framed expression of the esteem and regard of the donors for Mr. G. Whitwell, the honorary secretary of the society, whose invaluable services were thus tangibly recognised. Mr. Whitwell returned thanks in a very feeling speech. This pleasant ceremony concluded, the reports of the secretary and treasurer, which were of a very satisfactory nature, were read and adopted, and the whole of the officers, including the President, were re-elected, Mr. Askew's name being added to the committee.

As it had been resolved at the previous annual meeting that a committee be appointed for the preparation of a list of select British Ferns to be issued under the auspices of the Society, the said committee reported that the lists had now been compiled by the editor (Mr. Chas. T. Drury), and that, having gone carefully through it, it had been approved. Furthermore, it was resolved that the committee be fully empowered to deal with the publication and issue. The Chairman then read his paper, entitled "The Growth of a Hobby," relating how he had commenced to acquire an interest in British Ferns, and how that study had developed in course of time. Mr. GEORGE WHITWELL then followed with a most interesting and valuable paper, embodying a list of his own finds, and what is of great value a detailed description of the aspects, soil, and general conditions under which they were found. This latter paper forms a model which might be copied by many Fern-hunters with advantage for the benefit of students of varietal sports and those who are diligently seeking for a clue to their origin. The following Ferns were then exhibited and named:—*Lastrea propinqua* ramo-cristata nana, a dwarf crispy gem only a few inches high, raised by Mr. WHITWELL; *Scopolopendrium vulgare cristatum* densum, a perfect ball of finely-cut, ramoso-crested fronds, raised by Mr. CROPPER; *Athyrium f. f. setigerum* Vernonioides, a beautiful bristly form of setigerum on Vernonioides lines, raised by Mr. WIPER.

MESSRS. W. TROUGHTON, ASKEW, GARNETT, and others exhibited a number of interesting fronds, and these having been examined, it was resolved that the next annual meeting be held at the same place, and with a hearty vote of thanks to the President, the meeting terminated.

This Society consists of a coterie of British Fern lovers, finders, and raisers; the subscription is a merely nominal one of 5s. per annum, and an annual report, embodying very interesting papers is issued. All interested in this peculiarly unique branch of our British flora are invited to join, and the Secretary, Mr. George Whitwell, Serpentine Cottage, Kendal, or the President, Mr. Chas. T. Drury, F.L.S., V.M.H., 11, Shaa Road, Acton, London, W., will gladly furnish fuller particulars on application.

ARUNDINARIA JAPONICA.—This is a common species throughout Japan, both in the cultivated and wild state [often, but erroneously, called *B. Metake* in English gardens. Ed.]. Its general habit seems to approach that of *Arundinaria borealis*, Makino (Jap. Suzu-dake), but the culm is much larger, and the inflorescence and flowers are manifestly different from it. The culm is excellent to make arrows; hence the name of Ya-dake, or Arrow-Bamboo, by which it is generally known to the layman; though there are some other local names, such as Shinobe, and Ya-zino, &c. No person, however, denominates it Me-dake, or Female-Bamboo, which is properly the common name of *Arundinaria Simoni*, Rivière. In Japan the flower is very rarely met with; my floriferous specimen is from Kyūshū, and I owe it to the kindness of Mr. YOSHIO TANAKA, a Member of the House of Peers, of Tōkyō. T. Makino, in "Botanical Magazine," Tokyo, June.

DAHLIA.—Our Italian friends are about to celebrate the centenary of the introduction of the Dahlia into Italy this September. It is said to have been introduced into this country from Spain in 1789, and again in 1804, but it was not till 1815, says NICHOLSON in his invaluable *Dictionary*, that the introduction was fully successful.

Obituary.

MR. MAXWELL OF MUNCHES.—We regret to hear of the death of one of our oldest correspondents, Mr. Welwood Herries Maxwell, of Munches, Kirkcudbrightshire, in his eighty-third year. The Conifers and other trees at Munches are very remarkable, and have often been the subject of comment in these columns. A short notice of the Conifers is given at p. 518 of the *Conifer Congress Report* (Royal Horticultural Society, 1891).

VARIORUM.

TEA.—"The Chinese physicians say that upon the mountain Tiengo grow above one hundred sorts of Simples, all of very sovereign virtues. But, amongst all others, China is famous for a herb called Thea or Cha, and whereof the natives and other neighbouring people make their drink called Thea or Cha, taking its name from the herb. Of all the places in China this herb grows fastest, and in greatest abundance, in the province of Nanking, near to the city of Luchen, and indeed the same is only found in China, Siam, and in the island of Japan. The leaves thereof are very like unto those of Sumack, and that this is a sort of Sumack none need to doubt. However, it springs not wild, but by manuring; is no tree nor herb, but a bush or shrub, which they plant upon little hills three feet asunder, and grow as high as a Rose-tree, the branches whereof are full of flowers and thin leaves of a dark green colour, which, though they differ not in shape, yet they are of several sizes, for upon one shrub are at least of five several degrees in bigness. The first and biggest grow upon the lowermost sprigs; next to them follow those of the next size, and are lesser than the first, and so by degrees grow all the other sorts. But so much as these leaves decrease upward in bigness so much the more the increase in price, for a pound of dried leaves of the first bigness is worth five Dutch shillings, that of the second bigness is worth fifty shillings, but that of the third five guilders, that of the fourth fifteen, and that of the fifth and last bigness fifty. Yea, sometimes one hundred and fifty guilders a pound if well prepared. Upon the branches grow small green buds, which produce little flowers with white leaves, yellow within, and in bigness, fashion, and colour very like the flower of Sweet Briar, but different from it in smell. After that the flowers are shed, there remains a husk which contains a blackish seed, which, being sown in the ground, brings forth the third year new bushes, from whose leaves is gathered every year a rich harvest, and that in such places where it rains and snows, as it does in Europe, so that it is probable enough that there might be bushes raised from that seed if it were sown in some shady fruitful European soil. It is full of spreading roots, which run but shallow in the ground, and are good for nothing; but the leaves they gather every day, and, drying them in the shade, preserve them for their drink Thea, which they use instead of beer, not only at tables, but upon all visits and entertainments, and, which is more, whosoever has anything to dispatch in the palaces of the Grandees is presented as soon as he is seated with a cup of this liquor, which is always drunk, or rather supped off hot, according to the fashion of the ancient Romans, who esteemed more of warm than cold water. If at any time this liquor proves bitter to the taste they mingle a little sugar with it, and drink it to drive away drowsiness. But such especially find the benefit in

drinking thereof who have over charged their stomachs with eating, or discomposed their brains with too much strong drink, for it is a very great drier of gross humours and dispels vapours, occasioning sleep. It strengthens the memory, but increases gall if drank in too great a quantity. In brief, they extol the virtues of this drink infinitely, and attribute their not having the stone or gout to this, as they term it, most noble drink, which we may believe the rather because in all our journey forward and backward we saw nobody afflicted with these distempers. There is a very great difference in the manner of preparing and using this liquor between the Chinese and those of Japan, for the Japonners beat the leaves to a powder, and mingle it with boiling water in a cup, which they afterwards drink off, but the Chinese put the leaves whole into a pot of boiling water, which, having lain in steep for some time, they sip off hot, without swallowing down any of the leaves, but only the quintessence thereof extracted. Others prepare it with milk and a little salt mingled with the water, which is not so well approved; but, however prepared, it is not only drunk in China and other parts of India but is much used likewise in divers other countries, and the general consent of all people that they find much good by it enhances the price, and makes the same to be sold here at a very dear rate. *Extract from an Embassy from the East-India Company of the United Provinces to the Grand Tartar Cham, Emperor of China, 1669. . . . Englished . . . by J. Ogibb, Esq., Master of his Majesty's Revels in London.*"

MARKETS.

COVENT GARDEN, AUGUST 16.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day but often several times in one day. Ed.]

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asparagus "Fern," bunch	2 0 2 6	Maidenhair Fern, per doz. bunches	4 0 3 0
Carnations, per doz. blooms	1 0 2 0	Marguerites, p. doz. bunches	2 0 4 0
Cattleyas, per dozen	0 0 12 0	Mignonette, dozen	4 0 6 0
Eucharis, per dozen	2 0 4 0	Montbretias, bunch	0 6 —
Gardenias, per doz. spikes	1 6 —	Odontoglossums, per dozen	4 0 8 0
Gladiolus, scarlet, per dozen	2 6 5 0	Roses, Red, per doz.	1 0 3 0
— white, per doz.	2 6 4 0	— Tea, white, per dozen	1 0 3 0
Lilium Harrisii, per dozen blooms	4 0 5 0	— Safrano, per dozen	1 0 3 0
Lilium lancifolium album, doz. blms.	1 0 3 0	— Catherine Mermet, per bunch	2 0 5 0
Lilium rubrum, doz.	3 0 5 0	Smilax, per bunch	4 0 5 0
Lilium longiflorum, per dozen	4 0 5 0	Tuberose, per doz. blooms	0 4 0 6
Lily of Valley, per doz. bunches	12 0 24 0		

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, English, per bushel	2 6 3 6	Lemons, case	10 6 15 0
Suffields	2 6 3 6	Melons, each	1 0 2 0
Reswicks	2 6 3 6	Foreign Rocks	2 0 3 0
Julians	2 6 3 6	— Valencia, cases (24)	10 0 15 0
Quarrendons	4 0 5 0	Nectarines, per dozen	6 0 6 0
Apricots, per dozen	1 8 2 0	Class A.	2 0 4 0
Bananas, bunch	7 0 12 0	Class B.	2 0 4 0
Cherries, English, per sieve	3 0 6 0	Oranges, Murcia, p. case (100)	8 0 18 0
Currents, blk., sieve	7 0 —	Peaches, per doz.	6 0 4 0
— red, sieve	3 0 —	Class A.	2 0 4 0
— white, in gals.	2 0 —	Class B.	2 0 4 0
Figs (New), per doz.	1 0 2 0	Pears, Californian, cases	8 0 —
Filberts, per lb.	0 5 —	— Williams, French in boxes (48)	2 0 3 0
Grapes, Hamburg, new, per lb.	0 6 1 6	Pines, each	1 3 3 0
— Ali ante	1 0 1 6	Plums in sieve	1 0 4 0
— Colmar	1 0 1 6	— English, Rivers per sieve	1 0 2 0
— Gros Maroc, lb.	1 0 1 6	Raspberries, punnets, doz.	2 0 3 0
— Muscats, A., per lb.	2 6 3 0	Green Gages in sieves	3 6 5 0
— Muscats, B., per lb.	0 10 1 6		
— Belg an, per lb.	0 7 1 6		
— in barrels	5 0 —		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	5 0 7 0	Ferns, small, per 100	4 0 6 0
Arbor-vita, var., doz.	6 0 36 0	Ficus elastica, each	1 6 7 6
Aspidistras, p. doz.	18 0 86 0	Foliage plants, var., each	1 0 5 0
— specimen, each	5 0 10 6	Lily of Valley, each	1 9 3 0
Cannas, per dozen	18 0 —	Lycopodiums, doz.	8 0 4 0
Crotons, per doz.	18 0 30 0	Marguerites, per dozen	8 0 12 0
Cyclamen, per doz.	8 0 10 0	Myrtles, per dozen	6 0 9 0
Dracenas, var., per dozen	12 0 80 0	Palms, various, ea.	1 0 15 0
— viridis, per doz.	9 0 18 0	— specimens, each	21 0 63 0
Ericas, var., per doz.	12 0 86 0	Pelargoniums, scarlet, per dozen	8 0 12 0
Eucynmus, various, per dozen	6 0 18 0	— Ivyleaf, per doz.	8 0 10 0
Evergreens, var., per dozen	4 0 18 0	Spiraeas, per dozen	6 0 12 0
Ferns, in variety, per dozen	4 0 18 0		

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aubergines, per dz.	1 6 —	Mushrooms, house, per lb.	0 6 0 8
Artichokes, Globe, per doz.	1 0 1 6	— outdoor, sieve	2 6 —
Beans, Scarlet Runners, bush.	4 0 6 0	Onions, picklers	3 0 —
— Broad, home-grown, per bush.	1 6 2 0	— per bag	5 0 —
— English, dwarf, per bushel	4 0 6 0	— Green, dozen	2 0 3 0
— per sieve	3 0 —	Parsley, 12 bunches per sieve	0 9 1 0
Beetroots, bushel	2 0 —	Peas English, per bushel	4 0 5 0
Beet, per dozen	0 6 0 0	— in bags	6 0 7 0
Cabbage, tally	2 0 3 0	Potatoes, per ton	60 0 80 0
— dozen	0 6 1 0	Radishes, 12 bches.	1 0 —
Carrots, new, p. dz.	1 0 2 0	Sauad, small, punnets, per dozen	1 3 —
— in cwt. bags	3 0 —	Shallots, new, per sieve	2 6 —
Cauliflowers, per dz.	1 0 1 6	Spinach, persieve	1 0 —
Cress, per dozen punnets	1 6 —	— bushel	1 6 2 0
Cucumbers, doz.	1 0 2 6	Tomatoes, English, new, per 12 lb.	5 0 5 6
Endive, new French, per dozen	1 0 1 6	— Channel Islands, per lb.	0 4 0 4 3
Garlic, new, dozen bunches	2 0 —	— Bordeaux, per box	4 0 —
Horseradish, English, bundle	1 6 —	Turnips, new, per dozen	2 6 4 0
— foreign, per bundle	0 10 1 0	— in bags	3 0 —
Leeks, per dozen bunches	1 6 —	Vegetable Marrows, per dozen	1 0 —
Lettuce, English Cabbage, bush.	1 6 2 6	— tally	3 0 —
— English Cos, per score	1 0 2 0	Watercress, p. doz. bunches	0 4 0 6
Mint, new, p. doz. bunches	1 6 —		

REMARKS.—Some Green Cobs of Indian Corn are selling at 2s. per doz.; Cobnuts and Filberts have begun to arrive; Plums and Gages are plentiful and cheap; Apples in bags and bushels at about 1s. per bushel; Potatoes are easier in price.

POTATOS.

Potatoes: Beds, Lincolns and Kents, 63s. to 80s. per ton. John Duth, 32 & 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: August 15.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market thinly attended, with only a small business passing. There is no alteration in Trifolium, its supply and demand being alike moderate. New Mustard and Rapeseed, and also Thousand-headed Kale, are now offering. There is a good inquiry for New Winter Tares and seed Rye. For all kinds of Clover and Grass-seeds the market keeps very strong, Trefoil in particular has opened very high. Full rates are asked for Canary and Hemp-seeds, whilst Peas and Haricots move off slowly on former terms.

CORN.

AVERAGE PRICES OF BRITISH CORN (per imperial qr.), for the week ending August 11, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.	1900.	Difference.
	s. d.	s. d.	s. d.
Wheat	24 8	28 7	+ 3 11
Barley	22 6	23 7	+ 1 1
Oats	17 9	19 8	+ 1 11

FRUIT AND VEGETABLES.

GLASGOW: August 15.—The following are the averages of the prices recorded since our last report:—Gorseberries, 25 to £10 per ton; Strawberries, Scotch, 3s. to 6s. per dozen pounds; Cucumbers, 2s. 6d. to 3s. per dozen; Onions, Valencia, 4s. 6d. to 5s. per case; doz., 5s., 5s. 9d. to 6s. doz.; Pears, Angers' Williams, 4s. to 4s. 6d. per case; Apples, English, large, 14s. to 18s. per cwt.; doz., small, 7s. to 10s. doz.; American, 15s. to 20s. per barrel; Tomatoes, Scotch, 6d. to 9d. per lb.; doz., Guernsey, smooth, 5d. to 6d. doz.; doz., French, 4s. 6d. to 5s. per crate; Grapes, English, 1s. 3d. to 1s. 8d. per lb.; doz., Guernsey, 10d. to 1s. 2d. per lb.; Denia, 3s. to 5s. per barrel; doz., black, 4s. to 7s. doz.; Melons, 24s. 6d. to 6s. 6d. per case; doz., 36s. 9s. 6d. to 10s. 6d. doz.; Greengages, French, quarters, 4d. to 5d. per lb.; halves, 2d. to 3d. per lb.; cases, 1s. 3d. to 2s. per case; Plums, French Orleans, 2d. to 2½d. per lb.; doz., Goliaths, 3d. to 3½d. per lb.; doz., English Prolific, 12s. to 14s. per cwt.; Belgian Cherry-Plums, ss. to 10s. doz.

LIVERPOOL: August 15.—Wholesale Vegetable Market. — Potatoes, per cwt.: Early Regents, 3s. 9d. to 4s. 6d.; Kidneys, 4s. 6d. to 5s. 9d.; Lynn Grey, 4s. 9d. to 4s. 3d.; Turnips, 6d. to 8d. per 12 bunches; Swedes, 2s. 3d. to 2s. 6d. per cwt.; Carrots, 8d. to 10d. per 12 bunches; Onions, foreign, 3s. 9d. to 5s. per cwt.; Parsley, 4d. to 6d. per dozen bunches; Lettuce, 6d. to 8d. per dozen; Cucumbers, 1s. 3d. to 2s. 6d. do.; Cauliflowers, 8d. to 1s. 6d. do.; Cabbages, 4d. to 9d. do.; Celery, 2s. 3d. to 2s. 6d. do.; Peas, 3s. to 4s. per bushel; Beans, 1s. 3d. to 1s. 6d. do.; do., Kidney 8d. to 10d. per peck; Scarlet Runners, 8d. to 1s. do. *St. John's*: Potatoes, 1s. 6d. per peck; Grapes, English, 1s. 6d. to 3s. per lb.; do., foreign, 6d. do.; Pines, English, 6s. to 8s. each; Apples, 2d. to 6d. per lb.; Tomatoes, 4d. to 8d. do.; Currants, white, 6d. do.; do., black, 8d. do.; Peas, 1s. 4d. per peck; Cucumbers, 4d. each; Mushrooms, 1s. per lb. *Birkenhead*: Potatoes, 1s. 2d. to 1s. 4d. per peck; Peas, 1s. 2d. to 1s. 4d. do.; Cucumbers, 2d. to 4d. each; Cherries, 6d. to 8d. per lb.; Grapes, English, 1s. 6d. to 2s. 6d. per lb.; do., foreign, 4d. do.; Mushrooms, 8d. to 1s. do.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period August 5 to August 11, 1900. Height above sea-level 24 feet.

1900.	AUGUST 5 TO AUGUST 11.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.		
			At 9 A.M.	Day.	Night.	RAINFALL.	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.
			Dry Bulb.	Wet Bulb.	Highest.	Lowest.			LOWEST TEMPERATURE ON GRASS.
SUN.	5	W.S.W.	deg.	deg.	deg.	deg.	ins.	deg.	deg.
MON.	6	S.S.W.	57.7	53.7	60.8	47.2	0.10	61.3	62.9
TUES.	7	S.S.W.	57.8	55.2	63.0	49.5	0.22	60.5	62.2
WED.	8	N.N.W.	60.4	54.2	65.5	53.4	0.14	59.7	61.5
THU.	9	S.W.	56.4	53.8	63.6	51.0	...	60.2	61.2
FRI.	10	W.N.W.	56.9	53.6	61.9	53.7	0.02	59.5	60.7
SAT.	11	N.W.	59.7	55.9	72.0	48.6	...	59.2	60.3
MEANS...	...	...	58.2	54.4	63.8	50.7	0.74	60.1	61.4

Remarks.—During the first part of the week the weather was very stormy, the latter part being warm and bright.

GENERAL OBSERVATIONS.

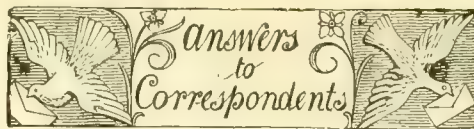
The following summary record of the weather throughout the British Islands, for the week ending August 11, is furnished from the Meteorological Office:—

"The weather during this week was cool and extremely unsettled, especially over Ireland and the more central parts of Great Britain, where very heavy falls of rain occurred, mostly on the 6th. Thunderstorms occurred in many parts of England on the 5th, and again in the north-western districts on the 6th.

"The temperature was below the mean, the deficit varying from 2° in Ireland, the S.W. of England and the Channel Islands, to 4° in most of the Wheat producing districts and to 7° in the Channel Islands. The highest reading occurred mostly on the 10th in Scotland, and on the 11th in England, but on various dates in Ireland. They were decidedly low for the time of year, the absolute maxima ranging from 74° in England, S. and S.W., to 67° in Ireland, and to 65° in Scotland, W. At many of the northern stations the maximum readings on the 6th, 7th, and 8th, were below 60°. The lowest readings which occurred at various times in the different districts ranged from between 34° and 38° in Scotland, N. and E., and England, N.E., to 45° in England, N.W., and to 52° in the Channel Islands.

"The rainfall was in excess of the mean in all districts excepting Scotland, N., the amount being as a rule very considerable. In Scotland, W., the total fall was twice as much as the mean, and in most of the English districts as well as in Ireland, S., more than twice as much. The largest daily amounts occurred on the 6th in Ireland, the N. of England, and the S. of Scotland, and on the 11th in Scotland and the N.E. of England. On the former date, more than an inch and a half was measured in several places, and as much as 2.0 in. at Edinburgh.

"The bright sunshine was less than the mean in all but the extreme northern and south-western parts of the kingdom. The percentage of the possible duration ranged from 54 in the Channel Islands, 48 in England, S.W., to 19 in Ireland, N., 18 in England, N.E., and 13 in Scotland, W.



BOOK FOR MOUNTING FERNS, &c.: *H. W. S.* Any bookbinder in a large way of business would make one according to order. It must be interleaved, so as to admit of being closed when filled with specimens.

BOOKS: *E. S.* We have no knowledge of a book on jobbing gardening.

CATALPA: *A.* A large, spreading tree, with broad, stalked, green leaves, and large panicles of irregular white flowers with purple spots. Consult any botanical dictionary.

CATLEYA GIGAS: *J. B.* Not a specially good variety, the spots are too pale. The flowers are thin in substance, and did not travel well. We should have packed the sides of the box with damp moss, and wrapped the flowers in paper. The box was not injured in the post, wonderful to relate.

CELERY, &c.: *L. J. Toms.* The insects infesting your Celery, &c., are two species of Clover-weevil (*Apion* species). The attack is a very unusual one, and the beetles were, no doubt, introduced with the Clover. In all probability the insects will not again trouble you; but, as a precaution, farm produce should not be stacked near the garden, as all kinds of insects are brought from the fields in hay, corn, &c. Your only course now is to beat the infested plants over a tarred tray or large bag-net.

CHLOROFORM FOR PLANTS: *A.* We do not credit the statement, and do not recommend you to try it.

DWARF FRENCH AND SCARLET RUNNER BEANS: *W. C.* You must be guided by the schedule in such disputes. We should take it that disqualification was not justifiable in this case, the Beans being quite distinct.

EXAMINATIONS IN HORTICULTURE: *W. F.* Those of the Royal Horticultural Society are held yearly in April; the last took place on Wednesday, April 25. An enquiry made at the offices of the Society, 117, Victoria Street, S.W., might elicit the date of the next one.

FIG DISEASE: *Suffolk* does not read his *Gardeners' Chronicle*, or he would have seen the disease figured and described in our number for July 7, 1900.

GALLS: *Rus in Urbe.* The nail-gall on the Lime, *Cecidomyia*, a fly; *Rhytisma acerinum* on the Sycamore.

HOLLYHOCKS EATEN BY GRUBS: *C. T.* The larvae of the Daddy-long-legs—in the vernacular, Leather-jacket. Turn up the soil, and expose it to the birds. We do not think you can do much beyond dressing it with salt or nitrate of soda. If, after turning it up, the surface be stirred with a digging-fork, and pinioned gulls or ducks kept on the patch, great numbers of the grubs would be devoured.

IRIS DISEASED: *J. Deacon.* The Iris is attacked by a fungus called *Sclerotinia Fuckeliana*. The summer form of the fungus is abundant on the fading leaves under the form of a fluffy, olive-brown mould. Cut out and burn such diseased leaves, and spray the entire tufts with a solution of potassium sulphide, $\frac{1}{2}$ oz. to 1 gallon of water. It will also be necessary to spray the foliage with a similar solution next spring, to prevent a repetition of the attack. *G. M.*

MALFORMED GLOXINIAS: *Curious.* Doubtless a perusal of our pages for sixty years would afford the reader many examples of the sort of malformation noticed in your Gloxinia-flowers; the result of great vigour in the plants, that is all.

MONTRETIAS GOING OFF: *W. C.* The bulbs, which are brown and diseased, are infested with swarms of the Eucharis-mite, *Rhizoglyphis*. Remove the healthy plants to a new locality, and treat the infected soil with gas-lime. *G. M.*

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*P. W.* 1, *Eulophia maculata*; 2, *Cirrhæa viridis*. *W. M.* 1, *Adiantum excisum*; 2, *Scolopendrium vulgare fimbriatum*;

3, *Lastrea aristata variegata*; 4, *Adiantum cuneatum*; 5, *A. pedatum*; 6, *A. capillus-veneris*.—*S.* 1, *Crinum capense*, Linn.; 2, *Allium sphaerocephalum*, Linn.; 3, *A. sphaerocephalum*, Linn.; 4, probably a form of *A. paniculatum*, Linn.; but without a bulb and a leaf it is impossible to name the specimen with certainty; no number, the *Trachelospermum jasminoides* you send is the wild form of that species. *C.*, *Rothsay*. *Brodiaea ixioides*.—*Gardener*. 1, *Cotoneaster Simonsii*; 2, *Spiraea callosa alba*; 3, *Gaultheria Shallon*; 4, a *Spiraea*; 5, *Spiraea Douglasii*; 6, *Berberis Wallichii*; 7, *Rhus typhina*.—*F. G. S.* *Vitis gongyloides*, figured in *Gard. Chron.*, January 13, 1883—a very remarkable plant.—*Cumbrian*. Fruits of *Arum maculatum*, poisonous.—*E. M. W.* *Euphorbia lathyris*, *Caper spurge*.—*Leedsii*. 1, *Gnaphalium margaritaceum*; 2, *Sambucus*, we do not know the variety; 3, *Saxifraga hypnoides*; 4, *Antennaria tomentosa*.—*C. A.* 1, *Cassinia fulvida*; 2, *Colutea arborescens*; 3, not recognised; 4, *Skimmia japonica*; 5, *Phyllyrea angustifolia*; 6, *Ligustrum ovalifolium*; 7, *Cupressus Lawsoniana*; 8, species of *Casuarina*; 9, *Spiraea Douglasii*; do not send more than six another time.—*Gleospodium*. Send the *Caladium* to some nurseryman who grows them. We are unable to name them.

NECTARINES: *R. H. S.* The fruits show sun-burning, which is due to exposure for many hours to such roasting sunshine as was experienced a fortnight ago. In a state of nature, fruits are not thus exposed; the shadows thrown by the leaves and branches obviating that, and they are constantly shifting by the action of the wind, and the passage of the sun across the sky. On a wall it is otherwise; there are no branches and few leaves to mitigate the ardent rays, and what few there are hanging in front of the fruits are pushed on one side. High colour does not mean high flavour in Peaches and Nectarines; and the more delicate skin of some varieties would predispose them to injury by very strong sunshine.

NORTHAMPTON SHOW: *H. K.* We do not profess to enumerate every exhibit; but leave it to our reporters to make selections. Moreover, the mere notice, without full description of table decorations and other objects of the florist's art, are of but little value to our readers. We are not in the receipt of any complaint from the exhibitors for whom you take up the cudgels.

STUNTING TREES À LA CHINOISE: *G. E. S.* Summer pinching and the removal of strong shoots, together with restricted rooting space, are the chief means of bringing it about. It is a difficult matter to carry out in ordinary establishments, with the usual changes of head gardeners now so common in this country. The stunting of trees artificially is the work of a lifetime, and pre-supposes a great liking for the art and persistency in carrying out every detail.

TOMATOS: *T. P.* Affected with spot (*Cladosporium*), repeatedly figured and described in the *Gardeners' Chronicle*. Burn all affected plants.—*F. L. L.* Your plants are affected with a fungus, *Cladosporium*. Consult the back numbers almost weekly; we give the information you want. In the meantime, burn all the affected plants.

TRAPA BICORNIS: *A.* Has nothing to do with the Water-Lilies, except that it grows in water. Your seed is probably dead.

TWIN CUCUMBERS: *G. E. W.* A not uncommon occurrence, when the plants are in vigorous growth.

VARIEGATED LONDON PLANE TREE: *A. Worsley*. The "maggot" had gone from the Plane shoot, and in its absence it is impossible to identify the species. Collect the infested shoots and burn them.

COMMUNICATIONS RECEIVED.—*J. D.*, Notts.—*J. Taylor*—*J. A.*—*R. P. B.*—*J. R. Box*—*Rev. H. E.*—*Rev. E. F. L.*—*W. G. S.*, Leeds.—*Dr. Franceschi*.—*Mrs. S.*—*W. Fell & Co.*—*A. D. H. O.*, apply to West, Newman & Co., Hatton Garden.—*J. Coward*.—*John Wall*.—*The Dean of R.*—*H. H. D'O.*—*J. H. F.*—*Max Leichtlin*.—*L. C.*—*D. R. W.*—*Marquis de Lassie*.—*E. V. B.*—*C. Sharpe & Co.*—*W. W.*—*A. P.*—*X. Y. Z.*—*C. S.*—*Potato*—*G. McCall*—*F. Batho*—*S. A.*—*A. D.*—*A. O'N.*—*Expert*—*W. W.*—*J. O'B.*—*S. A.*—*D. T. F.*—*R. P. B.*—*R. D.*—*W. R.*—*C. T. D.*

SPECIMENS, PHOTOGRAPHS, &c., RECEIVED WITH THANKS.—*Mrs. S.*



THE

Gardeners' Chronicle

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KIRKCONNELL, NEWABBEY.

SOME seven or eight miles from the town of Dumfries, on the Kirkcudbrightshire side of the river Nith, and within view of its tidal waters, is the old mansion of Kirkconnell. Although it has no connection with the tale of *Fair Helen of Kirkconnell Lea*, it has yet some historic interest, from its having been the estate of one of those who espoused the cause of the Stuarts in the Rebellion of 1745, and as the resting-place of some relics of that stirring time, which were given to the then owner by the Prince whose fortunes this member of the Maxwell family had risked so much for. Fortunately, by some means, the estate escaped forfeiture, and after a brief exile in France, its owner returned and built a portion of the present mansion. This is a quaint-looking and composite block of buildings. The earliest portion is the old tower, which is still in use, and whose origin is variously ascribed as dating from the thirteenth or the fifteenth century. It is one of the many square keeps, which were so numerous in the border districts at one time, and of which a number still remain, though few are in the same state of preservation as that of Kirkconnell. The portion built by the supporter of the Stuarts lies between it and a part which appears to come between the two in point of age, and is of considerable antiquity. In the olden days the

estate belonged to a family of the name of Kirkconnell, but came into the Maxwell family through the marriage of the heiress of the Kirkconnells with one of the members of that race which then, as now, had so much influence in Dumfries and Galloway. Its present owner, Mrs. Maxwell-Witham, is the last of this branch of the Maxwells; and Lieut.-Colonel Maxwell-Witham, her son by her marriage with the late Mr. Witham, is at present in South Africa in command of the Militia Battalion of the King's Own Scottish Borderers.

There is nothing elaborate in the surroundings of Kirkconnell. The great features of the policies surrounding it are the magnificent Oaks and the Spanish Chestnuts, which must have been of large size for many years. There are no Spanish Chestnuts in the district to compare with them for size and vigour. One cannot look upon them without admiration. The other timber is thriving, and adds much to the attractions of the place. The garden itself must be an old one; it is almost all surrounded by a high wall, though, as is often the case, at various times additions to the garden have been made without the limits of the sheltering wall. The glass is very limited in extent; but the few structures contained at the time of my visit some remarkably fine Begonias, whose superior quality is fully done justice to by the cultivation they receive at the hands of Mr. John Harper, the head-gardener. The same remark is due to the zonal Pelargoniums, which are always remarkably well done.

The walls are mainly appropriated to fruit, and a good crop is generally gathered, although the low-lying situation is rather unfavourable to early-blossoming trees. A few flowering shrubs are, however, grown on the walls, and add much to the interest of the garden by their flowers. *Buddleia globosa* is one of these, and is quite hardy at Kirkconnell, even without the shelter of the wall.

In the borders there are many of the old-fashioned Roses which were so popular before the hybrid perpetuals came in to drive them from so many gardens. In this garden, though a number of the newer Roses are also grown, those of earlier date remain still, and many form huge bushes covered in their season with great numbers of their charming flowers. Some are several yards through, and the size to which they have attained adds greatly to their beauty. Several of the names by which they are known here are not to be found in catalogues of the present day. One may be mentioned as bearing the name of "Plum Cake," from the spicy perfume it gives when one draws near. Another called "Swiss Boy" is a great favourite because of its beauty.

Florists' flowers are more largely grown than one usually finds in private gardens such as this. Mr. Harper is an almost life-long grower of such flowers, and he receives every encouragement to grow them. Pansies do not succeed so well as some other plants, on account of the situation of the garden; and a fine lot of Antirrhinums, which were the pride of the garden in their time of bloom, suffered sadly from a fungoid disease. The Phlox is a favourite here, and the best of the newer varieties are secured as they come into commerce. From these a number of varieties of high quality have been raised, and much interest is caused by their opening flowers. Pentstemons also are in great numbers, and of the most modern type; many capital seedlings have been raised here.

The interest taken in the garden by the ladies of the family has led to the acquisition for a number of years of the best herbaceous perennial plants. The collection of these is exceptionally good, and I do not know a garden in the district which has one of the same merit. The leading genera are all represented by choice plants. Last year I noted among them such fine plants as *Rudbeckia laciniata* "Golden Glow," some capital forms of *R. purpurea*, *Helenium autumnale striatum*, a number of plants of the favourite *Platycodons*, the little grown *Gentiana alba*, *Crocus aurea imperialis*, here grown as a hardy plant; *Antholyza paniculata*, *Campanula lactiflora*, and a number of the other tall Bellflowers; *Centaurea ruthenica*, several of the newer varieties of *Chrysanthemum maximum*; and, indeed, the élite of the more effective border flowers. The *Montbretias* are largely cultivated, not only among the other border flowers, but also in beds by themselves, where they make a fine effect. There is in the garden a good stock of the old double Martagon Lily, which has been in the garden for many years. Another plant which is rarely seen in gardens now has been at Kirkconnell for an unknown period. This is *Scilla lilio-hyacinthus albus*, the white variety of a species which is very plentiful on the Pyrenees. What has become of the pink form of this *Scilla*? *Lilium Martagon dalmaticum* grows well in the garden, and a feature in the spring is a quantity of the pretty *Leucojum vernum* which has the segments tipped with yellow instead of green. Several old Tulips are also to be seen, and though some of them are dull in their colouring, they are still pretty, and make one wonder how many generations of flower-lovers have looked upon their blooms. Daffodils also have a prominent place, and altogether the gardens present an interesting variety at almost any season. The more utilitarian products of the garden receive a due share of attention, the leading specialties in the vegetable department, the Parsley and Onions being remarkably well done. Many exhibitors would covet the strain of Parsley, so beautiful is it in every respect. It is pleasant to see this garden at any time, and to one who cares for hardy flowers, a visit is a treat of the highest kind. *S. Arnott.*

SETTING-UP SWEET PEAS.

THE way in which Messrs. H. Cannell & Sons set-up some fifty bunches at the great Sweet Pea exhibition at the Crystal Palace is worthy of note. Mr. H. Cannell, senr., who is ever original, realising that an exhibition of some thousands of bunches of these flowers in vases of the ordinary style would be very monotonous, resolved to depart from that stereotyped arrangement, hence he cut his Sweet Peas not in individual stems, but in literal branches, some 15 to 18 inches long, fairly decapitating the plants. These were set into comparatively large metal jars, and when complete in each case measured some 24 inches in height, and 20 inches across. They were the finest bunches yet seen, and naturally created considerable attraction, as well they might, considering that plants were beheaded wholesale to supply the exhibit. Those who want to have a fine display of these flowers another year may well follow up the Swanley example. But still further, having several hundred of clumps of Sweet Peas growing separately in the open ground that had been turned out from pots in the spring, each one having a hole specially prepared for its reception, with two or three spits of manure added, Mr. Cannell had a good number of these clumps first well watered, then lifted bodily, stick and plants, into 10-inch pots. These were again watered, and taken to

the Crystal Palace, not having flagged in the least. Such clumps in pots created a far finer effect than would plants grown on in pots if done ever so well. D.

KEW NOTES.

CRINUM RHODANTHUM. — Bulbs of this new Crinum were brought from Bechuanaland by Major Lugard, in 1897, and presented to Kew, where one of them flowered in July last year, and a second is in flower at the present time. The species is described in vol. vii. of the *Flora of Tropical Africa*, p. 397, from specimens collected by Major Lugard. It belongs to the same group as *C. Bainesii* (*Gardeners' Chronicle*, 1881, xvi., p. 40) and *C. ammodendroides*, which are characterised by large bulbs, deciduous brittle leaves which disarticulate somewhat remarkably, and short-scaped large heads of long-tubed flowers, more like those of *Hæmanthus* than of the ordinary Crinum. Mr. Baker's description of *C. rhodanthum* is as follows: Leaves lorate, above 1 foot long, $1\frac{1}{2}$ to 2 inches wide, thick, densely, and shortly ciliate on the margin. Peduncle $\frac{1}{2}$ inch in diameter. Umbel many-flowered; spathe-valves lanceolate, membranous, 3 inches long; pedicels $\frac{3}{4}$ to 1 inch long. Perianth-tube 3 inches long; segments lanceolate, red, $2\frac{1}{2}$ inches long, $\frac{1}{2}$ inch broad; erecto-patent in the lower half, and falcate above the middle when expanded. Stamens as long as the perianth segments; filaments red; anthers $\frac{1}{2}$ inch long. Style overtopping the anthers. The umbel now borne by the Kew plant is nearly 1 foot in diameter, and consists of about fifty flowers.

HEDYCHIMUM MOOREI (*H. COCCINEUM* × *H. GARDNERIANUM*).

Flowers of this hybrid were exhibited at a recent meeting of the Royal Horticultural Society by Mr. Moore, of Glasnevin, and received an Award of Merit, with a suggestion that the hybrid should bear Mr. Moore's name. As the same cross was made by Mr. Lindsay many years ago when curator of the Edinburgh Botanic Garden, and plants of it received from Edinburgh were then and are now still flowering at Kew, I sent an inflorescence to Mr. Moore, asking him to compare the two. He replied with his characteristic generosity as follows: "The two plants are practically the same; to Lindsay the credit is due. I was inspired by his success in crossing *Hedychiums*, and selected two good forms as parents, hence I have a larger inflorescence, and flowers nearly twice as large, than in Lindsay's hybrid; this is the only difference. I was not quite sure that the species I used was *H. coccineum*, it was so bright and good; but I am satisfied now that it was. I find these *Hedychiums* most useful in the aquatic-house."

This is also the case at Kew, where there is a good collection of them in the tank along with the tropical *Nymphaeas*, and they flower all through the summer. Amongst them is a hybrid between *H. coronarium* and *H. Gardnerianum*, also raised by Mr. Lindsay. *H. Moorei* has erect, crowded racemes of bright, rosy-red flowers on leafy stems 3 to 5 feet high.

ASPARAGUS TERNIFOLIUS.

This plant is figured and described by Sir Joseph Hooker in the last number of the *Botanical Magazine* (t. 7728), from a large example long cultivated at Kew as a variety of *A. aethiopicus*. It is now covered with elegant racemes of starry white flowers with orange-coloured anthers, and is quite worthy of recommendation as a flowering greenhouse plant. So far as I can make out, it is identical with what is generally grown as *A. Sprengeri*, and the pretty variegated form of it in the possession of Messrs. F. Sander & Co., which received a First-class Certificate from the Royal Horticultural Society, supports this view; a comparison of a flowering branch of Messrs. Sander's plant with that at Kew showing that the two are identical, except in variegation. The plant under

notice was first introduced from Natal by Mr. Thomas Cooper, many years ago, and flowered in the collection of the late Mr. Wilson Saunders, as noted at the time in the *Gardeners' Chronicle*, 1872, p. 1588, where it is also figured.

HIPPEASTRUM TERETIFOLIUM.

This is a new species of the section *Habranthus*, but differs from all other known *Hippeastrums* in having subterete leaves, similar to those of *Zephyranthes candida*. The flowers are few, in an umbel, on a scape 9 inches long, and they are campanulate rather than tubular, rosy pink, and 2 inches long. A description of the species has been prepared by Mr. Wright (successor to Mr. Baker in the departments of Monocots and Ferns at Kew), and will shortly be published in the *Kew Bulletin*. Bulbs of this and other interesting bulbous plants, including *Haylockia pusilla* and *Hippeastrum areca-valeatæ*, have lately been sent to Kew by Dr. Cantera, of Montevideo. W. W.

ALPINE GARDEN.

SEDUM BREVIFOLIUM VAR. POTTSII.

ONE finds that few of our Stonecrops are more admired than *Sedum brevifolium* var. *Pottsii*, as it is called in the British gardens. It is pretty in the glaucous, mealy tones of its colouring, varied at times in dry positions by various tints and hues of brighter colouring. It is a little plant, with which for some time I have had some difficulty, although I have seen it succeeding in gardens considerably further north than mine. This may be attributed to the greater dryness of the soil, but a further experience makes me think that the proper position for the plant was not given it in my garden. In some places it is only half-hardy, and in others it requires protection of a sheet of glass from the rain. I have come to the conclusion that it will do best in my garden in a perpendicular crevice in rock-work, or between two upright stones. In such a place it is healthier than when grown on the level, and got all the rain which fell. Not that it objects to much rain everywhere, for one of my correspondents who lives in a much moister district further south than I do, finds it to do well without any kind of protection.

Will some reader of this note kindly inform me under what name this plant is known abroad? I understand that Mr. Potts, of Edinburgh, brought it from a continental botanic garden. I am always inclined to think that it is a plant which should have a specific and not merely a varietal name, which has been applied to a plant because someone had brought it from a garden, where it had probably another designation. It seems a shy bloomer, and I do not think that I have seen it in bloom in the few gardens in which I have observed it.

MECONOPSIS ACULEATA.

There is every prospect of this beautiful *Mecônopsis* becoming a favourite with growers of alpine, provided that its complete hardiness is assured. At present it has not been plentiful enough to test this thoroughly, but there is likelihood that it will stand the winters of most parts of the country. It would be an ornament to any rock-garden by reason of its dwarf habit compared with such fine plants as *M. nepalensis* and *M. Wallichii*, and its lovely pale blue flowers, which are very large for so small a plant. It is perennial, which is a decided advantage which I would fain wish was the case of the taller species of *Mecônopsis*. *M. aculeata* flowered this year in the Royal Botanic Gardens of Edinburgh, where I saw the plant in bloom there, and also a photograph that was taken when the plant was at its best.

AGAPANTHUS UMBELLATUS MOOREANUS.

While the noble *Agapanthus* is hardy in southern gardens, it cannot be depended upon in more northern parts; besides, a smaller and neater plant is required for the ordinary alpine garden, yet

something distinct in character from the greater number of autumn flowers. Such may be found in the smallest variety of *Agapanthus umbellatus*, which is known as *A. Mooreanus*. It is quite hardy; it is a very desirable plant for the base of the rock-garden, and in such a position in my garden it is always acceptable at the present season. It grows about 18 inches high, and is suitable for even small rockeries. It may be described as a miniature form of the well-known "African Lily." It likes a good deal of moisture in its season of growth, which is afforded at the bottom of the rockery. The plant increases freely.

ERIGERON MUCRONATUS.

This Mexican *Erigeron* will withstand winters of an ordinary severity, and comes freely from self-sown seed as to be equal in permanence to any hardy flower that I possess. Last winter proved very trying to old plants, and I feared that this *Erigeron* had become exterminated; lately, however, a number of seedlings appeared, which are now in flower. This "Mexican Daisy," as it has not inappropriately been called, is a trailer, with prettily-lobed foliage and Daisy-like flowers, which show various shades, from nearly white to almost crimson. Probably a little protection afforded in winter would enable the plant to survive the winter every year; but where it reproduces itself from seed so freely as it does here, it seems unnecessary to be at the trouble. Young plants are also more vigorous, and flower more freely than older ones. A stock for a beginning is easily raised from seed, and this is probably the best way to begin, as it is not so easily established as some other plants removed when of full size. *S. Arnott, Carsethorn-by-Dumfries, N.B.* [In many gardens this is still known by the erroneous name of *Vittadinia triloba*. Ed.]

TREES AND SHRUBS.

ACER PSEUDO-PLATANUS, VARIEGATED FORM.

THIS tree forms a capital subject for planting at conspicuous points in the garden, provided its use be not overdone. The earliest leaves are of a green colour, like the type species, but the midsummer leaves show a few flecks of white, and the later ones are entirely variegated, and the latest are nearly pure white. In my estimation this tree will supersede the variegated variety of *Acer Negundo*, as the last-formed white leaves stand out very distinctly with the first-formed green ones as an effective foil. It is also a much taller and more shapely tree than the *Acer Negundo*. It is propagated by grafting on the common *Scyamore*, *Acer pseudo-platanus*. *Geo. B. Mallett, Isleworth.*

YELLOW-LEAVED PLUM (*PRUNUS DOMESTICA* FOLIS AUREIS).

This is a useful and effective decorative tree, as yet but little known or in our gardens. The type *Prunus domestica*, a native of this country, possesses numerous forms, all more or less beautiful, and in character distinct; but to my mind not any equals the yellow-leaved Plum for effectiveness. The general characteristics are those of the type, with ovate, lanceolate, convolute leaves, of a light green colour, edged and splashed with a yellow tint which is constant. The plant associates harmoniously with *P. Pissardi*. As a mode of increasing their stock of the plant, nurserymen employ layering; or in the case of standard trees, grafting or budding on the ordinary Plum stock.

CYTISUS SCHIPKAENSIS.

This species of Broom from the Bal'ans is a plant which rarely exceeds 6 inches in height, and it flowers in such profusion as to almost hide the foliage. In colour the flower is pure white, and is borne on racemes. It grows well in almost any soil or situation, is thoroughly hardy, and excellent on the rockery. The plant may be raised from seeds and cuttings. *E. S., Woking.*

APPEARANCE OF AMERICAN GOOSEBERRY-MILDEW IN IRELAND.

THERE is a suspicion on the part of some, that the very most is made of so called new plant diseases, and perhaps from the cultivator's standpoint this suspicion is not purely imaginary. The gardener rarely, or perhaps never, recognises a disease as such until it assumes the nature of an epidemic, destroying plants in a wholesale manner. When this state of things is reached, future action depends on the temperament of the individual owning the afflicted stock. If of a pious turn of mind, a visitation, against which it is hopeless to contend, is advanced as an explanation; and an attitude of calm resignation to the inevitable is assumed. On the other hand, if mundane views predominate, inquiry is made as to the cause of the disease, and means for preventing its extension. The disease under consideration (fig. 39) is a native of the United States, where it attacks Gooseberries,

form of a delicate whitish mildew, being quite external or superficial with the exception of numerous suckers or haustoria, which penetrate the epidermal cells of the host for the purpose of absorbing food. Very soon the mildewed patches present a mealy appearance, due to the growth of myriads of conidia that are produced at first as upright chains; these conidia soon become free, and are carried from one plant to another by wind, insects, birds, &c., and being capable of immediate germination, enable the disease to spread at a rapid rate. In turn the fruit is attacked; if the mildew is confined to one side, where growth is arrested, a deformed fruit results, as the healthy side continues to grow—not unfrequently, the entire surface of the fruit is covered with mildew.

As the season advances, the mycelium of the mildew becomes denser, and resembles a thin layer of felt of a dingy brown colour, the margin or growing portion remaining whitish. Nestling in



FIG. 39.—AMERICAN MILDEW OF GOOSEBERRIES.

A, Leaves and fruit of Gooseberry diseased; nat. size.
B, Ascus from winter fruit containing eight spores; $\times 400$.

C, Perithecia or winter form of fruit; $\times 150$.
D, Conidial or summer form of reproduction; $\times 200$.

both wild and cultivated, but more especially the latter. Its name is *Sphaerotheca mors-uvæ*, Berk. & Curt.; and furthermore, it is not one of those ephemeral diseases that appear for once and no more, as proved by one extract culled from many expressing a similar opinion, given in the Report of the Commissioner of Agriculture for the United States. "This is the one great enemy of the Gooseberry in the United States. It not only attacks the fruit, but often extends over the whole plant, effectually checking its growth. So prevalent has this become that the foreign varieties are almost universally discarded, as there are few localities where they will succeed." The disease is also well known in Canada.

This wretched pest has unfortunately quite recently been received from county Antrim, Ireland, through the courtesy of Mr. F. W. Moore, F.L.S., Keeper of the Royal Botanic Gardens, Glasnevin, Dublin.

The fungus is allied to the Hop Mildew and the Rose Mildew. Early in the season the parasite appears on the leaves, and young shoots under the

this felt are formed the perithecia or winter form of fruit, the spores from which are supposed to start the disease during the spring following their formation.

To the botanist the discovery of this New World species in Ireland will be a matter of interest; however, as the pest appears to be rapidly spreading in Antrim, its confinement to Ireland and Scotland is not likely to be of such long-standing as in the case of *Eriocaulon septangulare*, and unless special precautions are taken to arrest its spread, the probability is that it will soon make its presence felt throughout western Europe.

PREVENTIVE MEASURES.

Repeated experiments in the United States have proved that the disease can be kept in check by spraying with a solution of potassium sulphide. The first application should be made before the buds expand, and continued at intervals of ten or fifteen days. Diseased leaves and fruit should not be allowed to remain on the ground under the trees; burn or bury them. *Geo. Massee.*

NURSERY NOTES.

MESSRS. HARRISON & SONS, LEICESTER.

ONE of the oldest established seed firms in the provinces is that of Messrs. Harrison & Sons, the Royal Midland Seed Stores, Leicester. For the space of two centuries the Harrisons have been a firm of market-gardeners, farmers, and seedsmen, though during the past half century the growth and distribution of seeds has greatly extended. The founder of the firm was a John Harrison, and during the past two centuries there has always been a John Harrison in the firm; the present head bears that name, and it is being continued in the person of his son. The firm has a large wholesale business in addition to an extensive retail connection; they are farmers, still growing cereal root-crops, and hay on a somewhat large scale. They also fatten stock, and are therefore closely identified with country life at their farms at Aylestone and elsewhere; and with town life, by reason of their large business premises in Leicester. They have a shop and offices in the market-place, where a considerable staff is employed; they have in another part of the town a commodious warehouse of six floors, averaging something like 15,000 superficial feet; some malting premises, furnishing another 5000 ft.; and thus the business has become a considerable industry in late years.

Thomas Harrison, the father of the present principal, was an enterprising man; in addition to being a good gardener, he possessed considerable commercial ability, and under his direction the business greatly developed. The nursery business carried on by the firm is a comparatively modern development. It is as seed growers and dealers that the firm is chiefly known. Mr. John Harrison resides at a farm at Aylestone, on which he erected a substantial dwelling-house. The trial grounds of the firm are close by it, with a few glasshouses mainly for the purpose of testing the quality of certain seeds; and beyond this lie farm buildings, the out-door nursery, and many acres of arable land on which can be seen breadths of choice Peas, Mangolds, Turnips, &c. The land is of a reddish loam, deep and fertile, and capable of bringing out the best in vegetables.

In the way of nursery stock there are trees adapted for various purposes, and especially for street planting; choice evergreens and deciduous shrubs; large breadths of Gooseberries, Currants, and Raspberries, Seakale, &c. Under glass could be seen trials of Tomatos on a somewhat extensive scale; Gloxinias and Begonias, Egg-plants, and other interesting plants; while in the open were trials of Sweet Peas, and many annuals, with Culinary Peas, Potatos, Cabbages, Broad Beans, Turnips, Lettuces, &c.

Many novelties in vegetable seeds have been distributed by the firm; and of Peas, the first put into commerce by them was in 1859, when they distributed Leicester Defiance, a selection from Beck's Prizetaker. Dalby's Prince of Wales, a white round, was sent out in 1870, and superseded the old Ringwood Marrow. This was followed by Harrison's Early Eclipse, an early round Blue Pea; one of the very earliest and thoroughly hardy, while of good quality when cooked.

Harbinger was the first of Thomas Laxton's raising sent out by this firm; and from this was developed, in course of time, such popular varieties as Ameer, Gradus, Duke of Rutland, and Early Pearl, the latter earliest and most compact growing of the white-seeded Peas; and Mayor of Leicester, a large-podded, main crop variety, growing to a height of 2 feet. All these were distributed by Messrs. Harrison & Sons. Napoleon and Eugénie, and their synonyms Climax and Alliance, though bearing the name of Harrison, were actually distributed by a Maidstone seedhouse of that name. Harrison's Fascination, a new wrinkled Marrow Pea, sent out last year, has recently been awarded a Certificate of Merit by the Royal Horticultural Society: it is a very late variety,

growing to a height of 2 feet, producing many pods, mostly in pairs, which are well filled with medium-sized Peas of a pleasing green colour; the haulm, pods, and Peas, when the latter are boiled, are all of a grass-green tint. Harrison's Ameer (First-class Certificate, Royal Horticultural Society), is deserving of mention: it is a distinct early-green Marrow, growing to a height of from 3 to 4 feet, coming into bearing immediately after the early varieties; the seeds are green, round, and the plant being thoroughly hardy, will admit of its being sown much earlier than is usual.

A novelty in Peas for 1901 is Sir Walter Gilbey, this is a dwarf large-podded wrinkled variety of distinctive character. Another is Beatrice Harrison, another variety of something the same character, producing a plentiful crop of large well-filled pods. A variety sent out in 1898 may also be mentioned: Lord Granby, a prolific main-crop variety, having medium-sized pods of the type of Duke of York.

The Empress Longpod Broad Bean is another introduction of this firm: a considerable breadth of it shows it to be a greatly improved type of Johnson's Wonder Longpod; a green form of it was selected at the same time, and is known as Robin Hood.

Of Turnips, three new types have been sent out from Leicester, namely, Stratton's Green Round, of the Greentop Stone type; Harrison's Exhibition, a snow-white variety of the Snowball character, with a very thin skin and tender flesh; and Harrison's Marble, an excellent winter Turnip, being both solid and heavy, as the name implies; and this variety is much sold in northern markets during autumn and winter after being washed.

The firm introduced the Cheltenham Greentop Beet now so popular, and as its name implies, it originated at Cheltenham, and it received a Certificate of Merit at the International Vegetable Conference held at Chiswick some years ago. Among other varieties introduced by the firm may be mentioned the following: Early Market Carrot, a stump-rooted form of the intermediate type, and which is much grown for bunching purposes; Harrison's Westcote's Broccoli for cutting at the end of April, and in May; and subsequently a large late white variety known as the Victoria. Harrison's Improved Hearting Kale, a fine stock is largely grown by market gardeners on account of the constancy of its character. Of Celeries, there are two popular varieties, viz., the Early Rose, a pink variety solid in character, and quickly blanched; also the Leicester Red, well known as a late variety. The Magnum Bonum Parsnip, an improved selection from the Hollow-crowned, is also one of Harrison & Son's novelties; as is also Tomato Leicester Prolific, a handsome form of the Perfection type, and a great cropper.

After an examination of the Pea trials at Aylestone, Mr. Harrison said in reference to the Pea crops, that somewhat restricted breadths of Early Peas were put out in the spring, owing to these having been abundant during the past few years, and also through prices ranging low; but owing to the cold and wet weather experienced in February, followed by dry weather, only a thin plant resulted, and the yield will be limited. Late varieties have done better, but the great heat in July cut short the duration of bloom, and crops are comparatively small. Fine weather is necessary to secure harvesting in good condition.

Proceeding, Mr. Harrison said that large-podded Peas, such as Duke of Albany, are much in favour just now, even if they lack quality for table purposes. Small-podded wrinkled Peas, like Prince of Wales are going out of favour; and such varieties of Senator, Duke of York, Duke of Norfolk (an improved form of Duke of Albany), and Triumph, are taking its place; also Daisy, a dwarf growing Pea which produces a large pod, though it is deficient in colour, as dark podded Peas are generally preferred. Gradus is another large-podded wrinkled Pea that is becoming much grown; it is a somewhat delicate constitution, and should not be sown too early in the season. Telephone s a

very popular Pea, and there are now several improved stocks of it at the present time, such as Alderman, Incomparable, and others, showing a deeper colour in the pod, and therefore more saleable in the market, because not so liable to be so much bleached by the sun. Empress of India is a fine type, but said to be a somewhat delicate grower; Superiority, one of Eckford's raising, is a large-podded Pea, and a decided improvement upon British Queen.

The long-strawed, dark green podded Peas begin with Duke of Albany; there are several selections of this, such as Duke of Norfolk, Prince Edward of York, Duke of Rutland, Prima Donna, Kelvedonian, and Duchess, all fine in character. Of curved-podded Peas there have been several introductions of late. It may be said that Laxton started the group with Fillbasket, followed by Gladiator and one or two others. Since then, improvements have come both in the colour and size of the seed, such as Hertford Success, St. Duthius, Laxton's Standard, William Hurst, Witham Wonder, Chelsea Gem, Senator, and Gladstone, which may be taken as representing the best of the curved-podded types. A later development is a group of varieties of Peas with spear-pointed pods, well filled with large Peas of good quality, and of a deep green colour; Sharpe's Queen was the probable progenitor of these, and not unlikely, Stratagem. Some of the latest introduced of this type are Sutton's Dwarf Defiance, George Clelland, Buck's Royalty, Dwarf Telephone (which may be regarded as an improved Daisy with larger pods), and the Yorkshireman.

Lately there has been formed a group of very dark green-podded Peas; the form and colour of the pod may be said to have originated with Laxton's Omega. Among the earliest of these are the Sherwood, English Wonder, Pierremont Gem, Laxton's Hybrid, and going on to Autocrat; all of which form a section of Peas which gardeners may be proud to possess, because of their adaptability for early, mid-season, and late culture—the pods of deep colour, and they are of uniform good quality, a type of Pea pretty certain to receive increased attention in future years.

When asked to name a succession of good, useful garden Peas in their order of coming in, Mr. Harrison mentioned Eclipse, which he said was a selection from the original Laxton's Harbinger, made many years ago; and following this in earliness, Thomas Laxton, a very quick-cropping variety, but which should not be sown too soon; Ameer, Gradus, and Sutton's Bountiful. In private gardens, Ne Plus Ultra is still in considerable demand because of its high quality, although a somewhat tall grower; and there are several improved types of this, some of dwarfier habit.

Mr. Harrison mentioned as Peas of excellent parts among the newer varieties, a local exhibition marrow that is largely grown in the Leicester district; and among Peas of the Emerald Gem type, with glossy green pods and haulm, mention was made of Johnson's British Empire, a wrinkled marrow, producing larger pods and Peas than the Queen, but of much the same habit of growth, and of the highest quality.

In reference to Broad Beans, Mr. Harrison asserts that the Mazagan is still the earliest, being also of hardy constitution, so that it can be sown early, and Beck's Dwarf Green Gem; both of these are in demand by gentlemen's gardeners in small quantities for early crops.

The Spanish Beans, Seville and Aquadulce, are certainly early, but they are delicate in constitution, and spare of habit; nor do they set their pods freely, but when this is so they produce some of very large size. The old type of Johnson's Wonderful is now superseded by Bunyard's Exhibition type; its latest developments are such as Parker's Exhibition, Nutting's Invicta, Harrison's Emperor, and John Harrison, the last a recent selection with larger, longer, broader, and fuller pods. This was seen growing by the side of the before-mentioned varieties, and its general character attested to the

excellence of the selection made. The foregoing are all white-seeded Broad Beans.

The green-seeded long pods have also been subjected to improvements, and there is an increasing demand for them because of their better colour when cooked. Robin Hood, introduced by Harrison & Sons some ten years ago; Johnson's Green Mammoth, and Masterpiece Green Longpod, are cases in point.

The Windsor type, with its larger Beans, will hold its own, because so many prefer large Beans to small ones. Mr. Harrison states there are markets where Longpod Beans will not sell, only the old Windsor, and then with not more than two Beans in a pod. One cannot account for these singular local prejudices; but they exist. There is one type of Dutch Windsor Bean which has a white eye, that produces from two to four Beans in a pod, like Sutton's Giant Windsor. The harvest of Broad Beans for seed purposes promises well; there was a good set of pods, and the season has been, on the whole, favourable. There has been less smotherfly than usual; the hot, dry weather appears to have stopped their ravages. *Pisum*.

ORCHIDS AT MESSRS. J. McBEAN & SONS.

Without attempting anything like a collection of Orchids, but confining their efforts to a few kinds of the showier species of Cattleya, Dendrobium, Odontoglossum, and kindred subjects, very remarkable success has been attained by Messrs. J. McBean & Sons at their nurseries at Cooksbridge, Sussex. The houses were originally used for the cultivation of plants grown to supply flowers for cutting, and for cultivating decorative plants, and Orchids were introduced as an experiment in the first place. But so well did Mr. McBean, jun., acquire a knowledge of the cultivation of Orchids, that they warranted extensive space; consequently the decorative plants have by degrees been removed to the newer and more extensive nurseries at Plumpton, where among other showy plants, some fifty thousand Chrysanthemums, and large quantities of Lilies are grown. At the present time the older nursery at Cooksbridge is almost entirely given up to Orchids and Palms, and small quantities of Dracaenas, Anthuriums, &c., which occupy the stages in some of the loftier houses, broad shelves being placed near the glass of the roof for the accommodation of Orchids; and large numbers are suspended from the roofs. Grown in this manner, Mr. McBean has a large number of Cattleya Dowiana and C. Dowiana aurea in excellent condition, notwithstanding the fact that the greater part when acquired were the smaller and poorer plants taken out of importations, or plants badly cultivated bought from various sources. In one of the larger span-roofed houses about 1,000 robust plants of other species of showy Cattleyas were observed. These were growing near to the glass, with foliage plants on the staging beneath. This fine collection is the outcome of odd lots bought when they were in poor condition, and their present appearance shows that the treatment afforded is of the right kind.

The various houses filled with grandly-grown Odontoglossums, chiefly the best type of O. crispum, form a remarkable feature in the nursery, every plant being in fine health. Taking up the first plant which comes to hand, the rapid increase in the size of the pseudo-bulbs is at once seen, in some instances the one last made is twice the size of that of the previous year. When the pseudo-bulbs have attained their largest size, a number of young growths commence a new cycle in its life, and in this manner an increase in size is being constantly maintained. So rapid has been the increase in the size of some of the plants, that Mr. McBean recorded a few of them, and one of them was shown us as an example which flowered strongly in April last, and has since that time perfected a fine pseudo-bulb of a much larger size than the one which flowered. This new pseudo-bulb now has two very strong leafy new growths. When Odontoglossums can be grown in

large numbers as they are here in this manner, it must be very gratifying to the proprietor. Only a few are in flower at the present time, though a large number of flower-spikes are visible, some of which it is hoped may open their flowers when *Odontoglossum* flowers are few. Some experiments in that direction are being contemplated.

In the cultivation of the plants there appears to be no visible special arrangement. The houses,

glass; and in the *Dendrobium*-house some marvelously stout pseudo-bulbs of varieties of *Dendrobium* *nobile*, including *D. n. Ballianum* and *D. n. nobilius*, of which there are a quantity of plants of the true form, have been matured. Among the hybrids, *D. x splendissimum grandiflorum* are some of the most vigorous small plants of last year; the best evidence of good cultivation that could be wished for, as indifferently-grown plants do not

the Report of the Apple and Pear Conference of 1888, to resemble Jefferson's. The variety received the unusual award for an Apple of a First-class Certificate when shown by Messrs. Cooling at the Royal Horticultural Society's meeting on August 9, 1887. Since that time the variety has got into general cultivation, and is a recognised market variety, and valued in many private gardens.

Apple Irish Peach (fig. 41), synonymous with Early Crofton, is supposed to be of Irish origin, but beyond the fact that it was introduced into England by Mr. John Darby, of Addiscombe, and Mr. Robertson, of Kilkenny, the name of the raiser or whence it came are not known. The fruit is of middle size, 2½ inches wide by 2¼ inches high, somewhat flattened, and slightly angular; skin smooth, pale yellowish-green tinged with reddish-brown, thickly dotted with green on the shaded parts, and of a lovely red mottled with yellow on the parts exposed to the sun. The eye is small and closed; stalk short, thick and fleshy, inserted in a rather deep cavity. The flesh is greenish-white, tender and crisp. It makes a good pyramid, and is very suitable for pot-culture, bearing abundantly both indoors and in the open air. The fruits which are shown in our illustrations were grown by Mr. W. Roupell, Harvey Lodge, Roupell Park, S.W.



FIG. 40.—APPLE BEAUTY OF BATH.

which are old ones, are provided with the usual moisture-holding staging, with open staging above it for the plants to stand upon. The moist air has a healthy odour, and rain-water is copiously afforded. The chief advantage seems to rest with the unremitting attention of the younger Mr. McBean, who makes the cultivation of *Odontoglossum* his chief pleasure.

produce enough roots as would carry such pseudo-bulbs. When grown as these have been, each new growth emits its own roots, becoming in a short time self-supporting; whereas in a case of unintelligent cultivation, or of an unsuitable house, the leading growth has in a great measure to be supported by the old pseudo-bulbs, to the detriment of the health of a plant generally. *J. O'B.*



FIG. 41.—APPLE IRISH PEACH.

A small batch of a very fine type of *Odontoglossum cordatum* was in flower in one of the houses. All the forms were noted, being handsome and of varied colours. In another house a number of vigorous plants of *Miltonia Roezlii* were sending up flower-spikes, and a smaller number of *M. Phalaenopsis* were unusually thrifty. In the Palm-house (a large one) a collection of *Cypripediums*, a large number of Brazilian *Miltonias*, and batches of showy *Cattleyas* occupied the shelves. In an adjoining house a quantity of *Cymbidium*s were observed standing on a broad shelf close up to the

TWO EXCELLENT EARLY APPLES.

WE give in the present issue illustrations of Apples Beauty of Bath and Irish Peach, both of which are fit for the dessert in the months of July and August in the warmer parts of this country. Apple Beauty of Bath (fig. 40), raised by Messrs. Cooling & Sons, nurserymen, of Bath, is a small, flat, greenish-yellow fruit, flushed and streaked with red; a pretty early variety, of second quality, and said by Mr. A. F. Barron, in his descriptive catalogue of Apples exhibited in 1883 and 1884, and attached to

IRELAND.

MOVING BOG.

THERE was a subsidence of some bog-land in the vicinity of county Kildare recently, but fortunately the moving bog was not attended with any fatal results; the area was small, something like forty perches by thirty, the place being Kilberry, the property of Mr. Arthur R. Verseyhoyle. The quantity above mentioned split from the remainder, and again subdivided; the bank appears to be 18 ft. or so deep, had moved, and that where some turf had been cut for drying purposes had been raised some feet in height. Through many places large quantities of water are emerging, which is probably the cause of the accident; apart from this, the water has played havoc with some of the turf, and in parts has submerged it. The fears of the people of a further movement have been allayed. There were several miles of bog along this line, so that had this movement occurred during one of the week-days, very probably a fatality would have been recorded.

IRISH GARDENERS' SOCIETY.

The members of the above society held their usual meeting in their offices at D'Olier Street, Mr. O'Kelly occupying the chair; there was a fair attendance of members present. After the usual formalities were gone through, Mr. J. Richardson contributed a paper on "A Wet *versus* a Dry Season," which gave rise to an animated discussion; the proceedings ended shortly afterwards. *A. O'Neill.*

A DOUBLE TRAGEDY.

DOWN from a twig on a Northern Spy tree
A canker-worm swung in security;
He'd eaten all season since first he was hatched,
As a ravenous glutton he couldn't be matched.
He slipped inch by inch to the grass-covered ground,
Where he thought safe concealment might surely
be found
In which he could pupate till autumn set in;
But a hen came that way and she gathered him in.
Gathered — gathered — gathered — she gathered
him in.

She gathered him in, and his final rest
Was there, in there, in her well-filled chest;
And she strolled around in search for more,
For it tasted better than aught before.
But I thought of her end, her final act,
When the farmer'd slice with a carver's tact,
And remark, as each piece made him look less thin,
"I gather her in, I gather her in,
Gather—gather—gather—I gather her in."
"American Agriculturist."

NOTICES OF BOOKS.

ORGANOGRAPHY OF PLANTS. . . . By Dr. K. Goebel. Authorised English edition, by Isaac Bayley Balfour. Part I.—General Organo-graphy. (Oxford: Clarendon Press.)

THIS is an English translation of a remarkable book, and one unusually lucid, a quality not always observable in German treatises. The author rightly points out that botany is in a transition stage, the old ideal hypothetical morphology is disappearing, and the evolutionary morphology is rapidly displacing it. The old morphology was ideal, the new morphology is historical. "All the phenomena of life have a definite relationship to environment," which is only another way of saying that plants are all creatures of circumstance; and Dr. Goebel shows that morphology is not only hereditary or historic, but that it is the result of adaptation to circumstance or natural selection. The old morphology was based largely on hypothesis and conjecture, the new morphology is framed on observation and experiments. Nevertheless, there is still much that is merely hypothetical, and "phylogeny" which has such great attractions for some, is almost wholly conjectural. Dr. Goebel shows that form alone is not sufficient to characterise an organ, and points out that homologous organs are not always of common genetic origin, so that things are not always so simple as they look.

The author incidentally objects to the terms "actinomorphic" and "zygomorphic," as applied to flowers; but we cannot see that "radial" or "dorsiventral," which he proposes to use as substitutes, are any less objectionable, and in times past we got on fairly well with "regular" and "irregular" flowers. These varying forms depend on relative position and mutual pressure, accompanied by variations in the amount and distribution of nutritive fluids. The agency of insects may also have some share in the matter.

Another question treated on by Dr. Goebel is the occurrence of juvenile forms, and the difference in the plant at different stages of its growth, as in the case of the *Retinosporas*—a matter of interest to scientific horticulturists. Lastly comes the consideration of the influence of direct stimulus on the protoplasm, including the influence of light and water.

We cannot discuss these matters in the space at our disposal, but we may add that the book is one of great interest, and much more easy to read than some of the treatises of German origin.

FLORA OF BOURNEMOUTH. . . . By Ed. Linton, M.A.; with Map. (H. G. Commis, Old Christchurch Road, Bournemouth.)

THE casual visitor to Bournemouth might imagine that however agreeable the neighbourhood, its flora would not be very rich. A very short time will suffice to show him how erroneous such a notion is. The sea-shore, the mud-flats, the chines, the sands, the heaths, the bogs, the chalk-downs, the colitic strata, each of these has more or less a distinct and representative flora. A stranger visiting the locality may be familiar with one of these floras, but hardly with such a combination of them as he meets here. Let him, for instance, betake himself to Swanage, with its maritime flora, then mount the chalk-downs, "rest and be thankful;" descend to Studland, and so on to the heaths, and then to the salt-flats of South Haven. Let him note not only the beauty of the scene, but also the wild flowers at his feet, and he must be dull indeed if both mind and body be not refreshed. Bournemouth is taken by Mr. Linton as the centre of a district with a 12-mile radius, so that it takes in the Isle of Purbeck, Swanage, and Poole Harbour. Cruelly as have some parts of the district been vulgarised, there is still much open country free from the importunities of touting advertisers, and of such a nature that it offers little inducement to the agriculturist. Such places form the happy hunting-ground of the botanist, who little heeds, for the moment, whether he is in Hants or in Dorset.

It so happens that a portion of the Bournemouth circle, as adopted by Mr. Linton, is in one county, and another portion in the other. Each county, moreover, already has its published "flora." This fact necessitates a comparison between all the different factors, and an investigation to see what plants are common to all or peculiar to each. Mr. Linton has taken the ninth edition of the London *Catalogue of British Plants* as his guide. Accordingly we have fifty-five so-called species of Bramble, exclusive of hybrids and varieties; a number that could doubtless be considerably increased by some "subtle" observers; but the difficulty of following them would be proportionately great. Roses have only nine species allotted to them, which is surely a small proportion; but this again depends very much on individual differences of opinion.

Mr. Linton provides in his Introduction a feature we have not met with in any other local flora, viz., a series of the most commonly used Latin adjectives with their English equivalents. It is very unfortunate that the word pseudo should ever have been introduced; but that being the case, it would be better to have a conventional interpretation, such as "similar," or "resembling," rather than the more correct "sham" and "false." There is nothing sham or false about *Iris pseudo-Acorus*, or *Narcissus pseudo-Narcissus*, for instance.

In any case, residents in the Bournemouth district in particular, and British botanists in general, will be glad to put this volume on their shelves. It has a map; and, needless to say, an index.

GOOSEBERRIES ON NORTH WALLS.

WHY is a north wall in a garden always spoken of so disparagingly? One often hears the remark, "It is no use trying to grow anything on that wall, it gets no sun." Having had twenty years' experience with a north wall, I am able to say that the absence of sun is no reason why the wall should not be utilised. There are at least two kinds of fruit-trees which do well with a north aspect—Morello Cherries and Gooseberries. I will confine my remarks to the latter.

The advantages of growing this fruit on any wall are great, and as it will grow on a north wall, the inducements to grow it there are still greater. Some may be enumerated: the bushes bear very freely, they catch the frosts less, as the leaves hide the blossom a good deal; the hands do not get scratched so much when picking the fruit, nor are the clothes caught when walking amongst the trees, while the otherwise ugly wall is covered with what is, at any rate in the spring, very pretty foliage. Another consideration too, has been emphasized during the last two years in some parts of the country where the caterpillar has been a great pest. Picking off by hand is tedious in the extreme, especially when one finds certain trees covered with caterpillars a few days after they had been all picked off. Syringing them with an effective wash is expensive, unless it can be done on a large scale, and even then is unsatisfactory, for if you kill all the caterpillars to-day, a fresh lot will hatch to-morrow. When the trees are on a wall they are more easily dealt with, for either by throwing water on them with a can, or violently syringing, them with plain water, the caterpillars can be knocked on to the ground, and then easily crushed with a garden-rake.

Gooseberries want liberal feeding and moisture and given this, they will do well even with the little sun to be obtained on a north wall. Good planting, which means a good start, is the most important means to this end. A large hole should be dug, some of the sub-soil taken out if the top-soil is shallow, and the hole filled up with good earth and rotten manure in equal proportions. Some basic slag put in the bottom of the hole is a great help to the tree in after years. The tree should be planted with its roots about 3 inches from the surface, and evenly spread out. By planting in this

way, trees will grow as much in the first year as they would in two years if planted carelessly, and will be near the top of the wall so much the sooner, where they will get more light and air. For the same reason the young shoots should be nailed up as soon as they have grown a fair length. There is no fear that Gooseberry-trees will not bear through growing too strong, as it is the young wood which bears most fruit.

As regards sorts, there is a wide choice, but *Whinham's Industry*, notwithstanding its thick skin, has many advantages, not the least being that it will grow to the top of a six-foot wall in three years if attended to properly, and will bear most abundantly. It has a fine flavour too, but is not suitable for jam owing to the above-mentioned characteristic. P. A.

AMERICAN NOTES.

AMERICAN GRAPES.

LITERATURE is full of Americanisms; but the facts of this sort are no more striking, important, or interesting, than are the Americanisms of American fruits. These botanical and horticultural idiosyncrasies are just beginning to be appreciated; and we are coming to see that they have a large significance for us, and that they mark out many lessons of wide application in the horticulture of all the world. The peculiarities by which our native fruit species—of which we have an unusual number—are adapted to our soil and climate, and by which their cultural evolution has been dominated, are so common and so patent as to be easily studied; and they furnish many engaging suggestions of what has taken place in the older fruit species of Europe and Asia.

One of the largest and most striking of fruits is the American Grape. The European Grape is practically unknown here outside of California, and a few, a very few, Grape-houses. Our tremendous business in field-grown Grapes, aggregating thousands of tons annually, is built solely on the varieties produced from our indigenous species. These cultivated varieties of American Grapes, estimated to number 800 named and propagated, have all been produced within the last 200 years, and most of them within the last fifty years. This production of something new out of what was old, making what we did not have out of what was found here, seems to me to be properly characterised as evolution; though when Prof. Bailey gave an account of it under the title of "Evolution of our Native Fruits," the Editor of the *Gardeners' Chronicle* suggested, not unamiably, that he thought the term evolution misapplied.

In order to understand the range which our American Grape evolution has taken, one must note the wealth of our indigenous species of *Vitis*. In Prof. Bailey's recent monograph, there are twenty-three species and thirteen botanical varieties admitted, all native to the United States. Almost every one of these has been impressed into the breeding and hybridising experiments of such men as T. V. Munson, and many of these native types are already creditably represented by named and cultivated horticultural varieties.

Probably the most important commercial varieties are those derived from the eastern Fox Grape, *Vitis labrusca*. Concord, Worden, and probably Catawba, are the offspring of this species. The next most important group of varieties comes from the Southern Summer Grape, *Vitis æstivalis*, especially from two forms which Bailey makes varieties of this species, viz., *V. æstivalis*, *Linscomi*, and *V. æstivalis*, *Bourquiniana*. *Herbemont*, *Cynthiana*, and *Le Noir*, are representative of this class, which is especially adapted for wine making, but is not generally esteemed as a table fruit. A few varieties are hybrids of native species, particularly *V. labrusca*, with the European Grape, *V. vinifera*. Such varieties are generally characterised by high quality, and by weak, quickly

diseased Vines. Several species which are not very promising for their fruit, yield Vines specially resistant to phylloxera or particularly useful on limy soils.

The American Grape-growing industry has become one of the most highly developed of specialties, aiming always at the production of the largest possible quantity at the lowest possible price. In recent years, growers have often taken 10 dols. to 15 dols. a ton for the fruit after picking. It is hardly possible that the industry can be developed further along this line. The next change in our Grape growing must be in some other direction. Possibly it will be in the production of higher quality at a higher price; or, more probably, it will be in a more general manufacture of native wines. *F. A. Waugh.*

water in another mood? And the same element, under the stress of a hurricane, sweeping across the country?

After carefully perusing the word-picture on the unmercifulness of Nature in the first week of August, 1900, and recalled not a few others I have been afflicted by, I should like to suggest that we venture to alter one word in Wordsworth's immortal quotation. Instead of "Nature never did betray the heart that loved her," surely we may come near the truth by substituting the single word gardens; those charming compounds and pleasaunces of Nature and Art never did deceive the hearts that love. It is these walled-in protectors that stand between, and break the forces of Nature and her furious mood, to which we are in-

Friday! of storm-downpour before the last Bank Holiday. It was heroism to see delicate women and strong men struggling with the elements until they had staked and secured, so far as might be, their fruit-trees and plants. In adding up the results of the storm, it was found that many more flowers, fruits, vegetables, in proportion came more or less safely through than was expected. This is no doubt partly due to much shelter in the smaller areas; but also to the fact that so many of the owners and occupiers of such gardens live on the spot, and a few sticks or ties at the starting of a storm may often save trees, crops, and plants from destruction. A stake, a tie, the closing of a gate or door meantime, may make all the difference between great and little loss. *D. T. Fish.*



FIG. 42.—THE OLD LEBANON CEDAR IN THE PHYSIC GARDENS, CHELSEA. (SEE P. 150.)

"THE MARTYRDOM OF GARDENING."

As I read of the serious damage to vegetation all over the country through the unusual severity of the weather in early August, I was reminded of Burns' pathetic words, "Man's inhumanity to man bids countless thousands mourn." By merely changing thousands to millions, we hardly can approximate a true description of Nature in the garden, or doing her worst to blacken and bruise rural beauty. We have seen not a little of the havoc so vividly depicted in a recent leader. One of the most striking features of it all is, the predominating power of water in the ruin made in the garden. Over millions of acres the colour was, as you put it, of flowers washed out. Thousands of branches heavily laden with fruit riven off. And yet what more gentle than

debted for the remnants that remain for our coming shows.

You conclude your leader on our first, almost altogether black Bank Holiday, by reminding us of Nature's insensible cruelty. She can, however, repent, though often too late for horticulturists, market-gardeners, and especially for the exhibitor. And, as you conclude, we bitterly experience the full significance of those Arnoldian words: "Sad Patience, too near neighbour to Despair." Exactly. And yet perhaps we have no class of men—in justice to facts as well as sex, we must now include women among us—who have less despair and more sturdy perseverance and patience than have the gardeners; and I have seen many almost sublime examples of gardeners in my time.

Some of the latest of these happened on the black

THE QUINCE.

THE history of the Quince carries us back as far as the early days of Greece. An ancient, and always a highly-esteemed fruit. Judging from the prices of the last few years, the Quince appears to have fallen from its high estate. The Greeks and Romans considered it to be possessed of special health-giving properties. The modern Quince-grower would doubtless like to persuade the public of the truth of this, and would gladly see a little of the money that is spent on patent medicines devoted to the purchase of Quinces. At all events, there will always be a fair demand for good samples of this fruit, and every farmer should have a tree or two for his own use. For jellies, and for preserving with other fruits, it has a high value, and can be easily and cheaply grown.

SOIL.

The Quince can stand more neglect than most fruits, and usually gets all it can stand. It is a popular belief that a low, wet corner, unfitted for anything else, will make an appropriate home for a Quince-tree. Nothing could be farther from the mark. It should have a rich, deep, mellow soil, and well-drained at that.

PLANTING, &c.

Two-year-old trees should be planted, and at a distance of 12 feet apart. The tree should be shaped with a very low head, the pruning being merely the thinning out of the centre, the removal of all suckers, and an occasional cutting back to keep the tree from getting a straggly appearance. Some people grow them in bush form. If this is done, only three or four main stems should be allowed to grow. Where old trees have been neglected, they should be thoroughly pruned on the lines indicated, and have a good dressing of manure worked in around the roots in spring. When the trees are in full bearing, cultivation becomes difficult on account of the closeness of the trees and their spreading character. The Quince orchard may then be seeded down, but pruning must not be neglected, and a top-dressing of manure should be given every second or third year.

DISEASES.

Blight and "red rust" are the worst diseases affecting the Quince. The latter is the same fungus that in the earlier stages is known as the "Cedar-apple" of the red Cedar. Spraying with Bordeaux Mixture will assist in controlling it, but where practicable, it would be advisable to cut down Cedars near the Quince orchard.

INSECTS.

The borer and Quince-curculio are sometimes injurious. The former is the round-headed Apple-borer (*Saperda candida*), and is referred to in the 1897 Institute Report, p. 180. The curculio can be trapped by the "jarring" method. *M. Burrell, St. Catherine's, Ontario, in "Canadian Horticulturist."*

PLANT NOTES.

GLAUCIUM LUTEUM VAR. TRICOLOR.

SEED of this fine plant came to me two years ago from Mr. Whittall. It has flowered this year, and is now probably the showiest thing in the garden. The large flowers, which are freely produced, are of the most brilliant coppery-orange, with black centres. *A. K. Bulley, Neston, Cheshire.*

THE WEATHER IN WEST HERTS.

THROUGHOUT the past eleven days the weather has been warm, both during the daytime and at night. The day temperatures, however, were, as a rule, much more unseasonably warm than the nights. On each day during this period the highest reading in the shade has exceeded 70°, and on three of these days rose above 80°. The ground temperatures are consequently very high, the reading at 2 feet deep being at the present time 6°, and at the depth of 1 foot as much as 8°, above their respective averages for these depths. No rain worth mentioning has now fallen for nearly a fortnight, and the ground is again becoming very dry, no measureable quantity of rain-water having come through the bare soil percolation gauge the last two days. It is now nearly seventeen weeks since any rain-water at all came through the gauge on which short grass is growing, with the exception of a few drops in the middle of July. The winds were very light, and on the 18th the mean velocity at 30 feet above the ground amounted to less than a mile an hour. During the past ten days the sun has shone brightly on an average for over ten hours a day, whereas for the preceding ten days the mean duration was less than 3½ hours a day. *E. M., Berkhamsted, August 21.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Odontoglossum Rossi.—This plant is so attractive, free-flowering, and easily grown, that it is a surprise that it fails to become better known. A long and rather dry resting period having been afforded after flowering, it is commencing to grow anew. The moister air at night, and generally cooler conditions, will conduce to healthy growth, and more water should be afforded, which points to the wisdom of examining the potting medium. If this be found in a decayed state, let it be replaced with fresh. A basket forms the best receptacle for the plant, and once established therein, some years may be allowed to elapse before affording a new one. If a plant has outgrown its basket, remove all the dead roots, and then place the plant in a new one, affording ample drainage, and a thin layer of equal parts of peat and sphagnum-moss. Apply water, and hang in a cool house near the roof-ventilators. On bright days damp the basket morning and afternoon, and keep the materials and surroundings in a generally moist condition.

Odontoglossum Cervantesii succeeds under generally similar conditions as the foregoing, and may have its needs attended to forthwith. Imported plants, for the present, may be laid on a moist stage in a shady spot, and as each piece breaks into growth, it should be put into a small pan, with crocks occupying three-fourths of the space, and the usual surfacing of peat and sphagnum-moss. Until root-action becomes visible, an occasional sprinkling, in order to keep the moss alive, will be sufficient.

Oncidium incurvum is a useful cool Orchid, flowering at a season when Orchid flowers are not plentiful. Soon after the flower-spikes are removed, the required re-potting should be carried out; but when the plant is thriving, re-potting is seldom needed. The pots should be sufficiently large to take the roots comfortably, and the drainage materials should come within 2 inches of the rim, the remaining space being filled with good turfy peat, with a few patches of sphagnum-moss here and there on the surface, to afford a guide as to the condition of the materials in regard to moisture. This plant does best in a cool-house, but should not be kept so moist at the base as *Odontoglossums* are; and in fact water during the winter should be very seldom applied, although the plants are then producing new leaves. The white-flowered form should be afforded a little more warmth during the winter.

Mexican Lælias.—These plants make rapid progress during the early autumn, the temperature being just what they require. Shading should now be discontinued, and much ventilation afforded day and night, providing the weather is favourable. *L. anceps* and its varieties are now showing their flower-scapes, and rooting freely, and water should be liberally applied. *L. autumnalis*, *L. furfuracea*, and similar species, should receive water more sparingly whilst the growths are in their early stages, or damping-off may occur. *L. autumnalis* may have fresh material when the growths are about midway in their development, if it be needed; but re-potting should be done soon after the flowers are over, if the new roots are not too far advanced. *L. majalis* should now be rested, only applying so much water as will keep the bulbs plump. Let the plants be hung where fresh air can reach them—it will help to solidify their pseudo-bulbs.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Fruit Gathering.—Attention should be given almost daily to this matter, otherwise some of the fruit will become over-ripe, or damaged by falling from the trees. The fruits of the Nectarine, Peach, and Apricot, should be taken in the early morning before they become heated, and all that are sufficiently ripe be placed in the fruit-room. The gathering of these soft fruits must be carefully done, not squeezing them in the least degree with the fingers. It is best to place the palm of the hand on the apex of the fruit, and let the fingers close in round the base; then, if the fruit

is sufficiently ripe it will become detached with a gentle pull outwards, and the pressure being thus distributed over the whole surface of the fruit, it will not be bruised. Fruits required for bottling whole must be gathered in this way; and these as they are gathered, should be put into flat-bottomed baskets well lined with paper, thin shavings, or wood-wool. For carrying large quantities of fruit to the fruit-room or packing-shed, I have found nothing to equal a hand-barrow lined and padded in the same way as the baskets. The choicer or dessert Plums should likewise have careful handling. These fruits should be detached, together with the stalk, from the spurs, &c., with a pair of Grape-scissors, and be laid in a single layer in a basket. When the fruits have to be sent long distances by road or railway, let them be gathered slightly under-ripe. Plums, and other stone fruits, will keep for several days in a cool, dry store, if placed on shelves covered with tissue-paper, and at some little distance apart.

Morello Cherries will in many gardens be quite ripe enough for preserving and bottling, thorough ripeness spoiling them for both purposes.

Early Apples and Pears are maturing fast, but as these are best gathered when required for consumption, they need not be placed in the fruit-room. The general in-gathering of Apples and Pears will soon begin, and possessors of a fruit-room will be wise to cleanse, white-wash, and prepare it for the reception of the fruit.

Protecting fruit.—Hexagon netting or fine muslin are suitable protection against wasps, birds, and flies, and the only economical means where much fruit must be protected till it is fit for gathering. If birds only have to be guarded against, fish-netting is all that is wanted, provided it is so placed that the birds cannot peck the fruit from outside the nets. Now is the time to search for wasps' nests by day, and destroy them when found at night. Coal-tar poured into the holes if in the ground, stopping these with sods; or slow-burning squibs made with gunpowder mixed with flowers-of-sulphur, will destroy the nests and their contents, although it is prudent to dig them out next day, and smash them up with a spade. Cyanide of potassium will kill wasps if a little be placed in the entrance to the nest, but it being a deadly poison much caution is needed in the using of it, and I do not therefore recommend it. A good many may also be trapped in bottles partly filled with beer and sugar, or in the glass traps sold for the purpose, and other devices.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

The Stove.—All the light possible should be afforded the inmates, and the blinds made use of only during bright sunshine, and air admitted freely in favourable weather. The amount of water afforded *Stephanotis floribunda*, *Clerodendrons*, *Allamandas*, *Bougainvilleas*, &c., may now be reduced. Fireheat has again become necessary at night, and for the present the temperature may not fall below 70°. *Euphorbias* (*Poinsettias*) should be fully exposed to sunshine and afforded free ventilation, strict attention being paid to the condition of the soil in the pots, so as to keep the foliage healthy. It is useless to expect large bracts from plants which have lost their leaves from any cause; on the other hand, an excess of water at the roots, or cold by night, will cause the leaves to turn of a yellow tinge and fall. Those plants which have filled their pots with roots should be given weak guano or manure-water made from deer or sheep dung twice a week. Let the plants be syringed morning and afternoon, and afford air during the night, but maintaining a temperature of 68° to 70°. Any plants which were struck late should be shifted into the pots in which they are to flower, and plants useful for many decorative purposes may be grown in large 60's. *Euphorbias* should be encouraged by applications of manure, no more stopping of the shoots being practiced after this date. *Plumbago rosea*, *Justicias*, *Scutellarias*, fibrous-rooted *Begonias*, *Hebecliniums*, *Gardenias*, and *Eranthemums*, should be afforded manure-water frequently.

Fernery.—At this date all discoloured fronds should be removed from the plants, and the latter stood thinly if growing in pots; also overhead syringing may be omitted, and the blinds in most cases be removed, as a moderate amount of sunshine will mature the fronds, and they will last much

longer when removed from the plants. A number of Selaginellas, sufficient to meet requirements, should be put in 48-pots, filling the pots with shoots, which soon become established when placed in moist heat.

Hard-wooded Plants: *Aralea indica*, *New Holland*, &c.—The hot weather and drying winds call for special attention being paid to affording water, and plying the syringe among them morning and evening, and unless this be done, insect pests are likely to work mischief on many of them. *Richardias* in pots that have been rested may now be shaken out of the soil, and re-potted in a loamy soil to which decayed manure, to the extent of one-third of the whole mass may be added. Let the plants remain outside for a month longer, and when they are started, afford them abundance of water at the root. *Richardias* planted in the open will be improved by a mulching of decayed dung, water being afforded at short intervals of time. These plants should be lifted early in September.

General Remarks.—When the seeds of *Cyclamens* are ripe, sow them forthwith in pans, dibbling them in an inch apart and $\frac{1}{4}$ -inch deep, and place them in an intermediate-house. Established *Cyclamens* should have some weak manure-water, and be kept close to the glass, affording air freely, shading from bright sunshine, syringing early in the afternoon, and closing the pit or house at the same time. If thrips are found on the plants, apply XL-All. The plants of *Mignonette* growing in pots should be thinned to $1\frac{1}{2}$ inch apart, and the sashes taken off the frame or pit in fine weather. It is not too late to make another sowing of *Mignonette*-seed. Bulbs of *Lilium longiflorum* and *L. l. Harrisii* should be potted as soon as received, or covered with moist leaf-mould or Cocoanut-fibre refuse; as when the bulbs become dried, they bloom indifferently. A suitable compost for these Lilies is one that consists of equal parts of peat and turfy-loam, with some silver sand round the bulbs, and mixed in the soil. One bulb in a 6-inch pot makes a useful decorative plant, and three or more in slightly larger pots make a fine display if they can be got into flower together. The pots should not be more than two-thirds filled with the soil at planting time, more being afforded when roots appear at the base of the stems. After potting, water, and plunge outside, and cover with 3 inches of ashes, or cocoa-fibre refuse for choice.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Cropping.—The great need of a thorough preparation of the land from which two or even three crops may be taken in the course of one year without further manuring was mentioned early in the present month, and as a few months hence important vegetables, as Onions, Potatoes, Parsnips, Cabbages, and Cauliflowers, will be sown or planted, the land on which these will grow in the future should be cropped with some vegetables which will be cleared off by the end of the year. Gardeners who exhibit at horticultural shows should not intercrop or crop too closely, as the first means to a certain degree close planting. Most gardeners assert that two crops growing together impoverish the soil, besides curtailing the light and air which each requires for full development. Insects abound when the land is inter-cropped or closely planted. There is not much doubt but that the Potato disease is induced, and that its spread is greatly favoured by this practice. I believe if the land was fallowed after a crop was taken, that fungoid troubles would almost disappear from our gardens. Although to do this would require a greater area of land than the average gardener has to deal with, there is no doubt that the quality and quantity of the produce would well reimburse the owner for his expenditure.

Celery.—It is impossible to obtain good heads of Celery unless water can be abundantly applied to the growing crop. When Celery must be fit for salads early in the autumn, the most important point connected with its cultivation is the water supply, for if this be not abundant the Celery leaf-mining-fly soon appears, and dusting with soot has but little effect in mitigating the ravages of this insect. The surest remedy is to remove the infested leaves and burn them, and encourage the plants to grow rapidly by means of liberal doses of liquid-manure. Strong insecticides are not advised,

as these destroy the foliage. Suckers should be removed as soon as they appear, and their early removal helps the plants greatly. Any leaves which lop over should be promptly supported by bast-ties loosely put round the plants, and if the plants fall about much, moulding-up should not be delayed.

Asparagus.—The heavy rains of the month have benefited all kinds of vegetables, and Asparagus in particular. Beds which have recently been top-dressed will not need any more assistance this year. The roots which will be forced this year and next spring should receive the final dressing of salt, applying it during a shower of rain. Too much feeding cannot be afforded: crowns that are going to be forced.

Globe Artichokes.—If the land on which this vegetable is cultivated is light or shallow, it should receive liberal manuring till the end of the month of October, more especially if the growth is weakly. Liquid-manure applied to the roots of the clumps has good results, and forces on the growth of small heads. The heads that are too old for use should be removed from the plants, and weak stools should have at the least one-fourth of the number of heads cut off. This sort of thinning strengthens the plants, and they do better another year. Seedlings which show heads having prickly scales should be removed as soon as they are distinguishable.

Late Peas.—So far, the season has favoured the growth of late-sown Peas, and the heavy rains have saved much labour. Should September be warm, the production of pods will go on till the haulm is cut off by frost. Liquid-manure should be occasionally afforded, and the haulm syringed with clear water. Pea-plants treated in this manner are rarely attacked by mildew, and the pickings are abundant and prolonged.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Peach and Nectarine-trees.—The earliest forced trees, now that active growth is arrested, may have all weakly shoots removed, which are not capable of producing fine fruits. The remaining shoots should now be shortened more or less, according to their strength, shoots of middle-size being reduced to 1 foot, and strong ones to $1\frac{1}{2}$ foot, always cutting back to triple buds. This will assist the uniform ripening of the shoots, and strengthen them. Immature shoots should have a few of the leaves on them cut in half to admit the sunlight, for exposure for a month in this manner will ripen the wood and render the buds plump. Trees which are trained on the back walls of the houses are more especially benefited by this kind of treatment. No attempt should be made to rest the trees by a starvation treatment; rather afford water copiously to all, and liquid-manure occasionally to aged ones. Red-spider must be rigidly kept in check, or premature ripening of the foliage will occur, to the detriment of the future crop of fruit.

Succession Peach-houses.—As soon as the trees are cleared of their fruits, wash them well with clear water, and then cut out all useless shoots, and expose every other shoot to sunlight. Dig the border lightly with a fork, and afford water to moisten the soil throughout. An occasional syringing with clear water will soon restore vigour to the trees after a heavy crop of fruit. Gross shoots should be removed or closely pinched in after this date. Gradually inure the trees to full exposure and the night dews, and keep the house warm during the day. The fruit in the latest house being unusually late this season, it may be necessary to keep the house slightly warmer than is thought necessary in the average of years. This is a matter which the gardener must determine for himself. Where the trees cover the whole trellis, the present affords a good time to shorten all the shoots that are bearing fruit to four or five leaves beyond the fruit, which will have the effect of increasing the size of the fruits. Trees which are heavily cropped may be assisted with liquid-manure, and in general afford them the treatment advised for earlier trees.

Strawberries.—All potting should now be completed, and in the case of those that have filled their pots with roots, liquid-manure may be occasionally afforded. Remove the runners, and pull up weeds springing up in the pots. Afford the plants plenty of space, moving them weekly in order to prevent the roots getting into the cinders. Apply lime-water in a clear state if worms get into the pots. Moisten the foliage after bright days.

THE APIARY.

By EXPERT.

Sections.—All sections should be removed at once in districts where the honey-flow has ceased, otherwise the bees will commence taking honey down very quickly; and all honey should be stored away where the bees cannot get to it, or robbing will commence very quickly, and when started, even the most experienced of bee-keepers find it a difficult matter to stop it. All sections should be cleaned, and placed away in a box or iron chest, corn-bin, &c., particularly now the weather is so warm. Of course, this applies to sections not sold; all sections not filled should be extracted as far away from the bees as possible, and placed into boxes, and a little naphthaline kept in the box will keep the wax-moth away. The sections then come in for next year, but if the sections are not very clean, they will be best burnt; nothing looks so bad on the breakfast or tea-table as dirty sections. Sections not filled properly can be sold at a reduced price, or can be placed on the bees which are not strong, and so save feeding them. All hives should be carefully gone through, and the weak ones marked, so that you can, if secured, unite a driven lot with them; and take away the queen from the old lot before uniting them. Flour the old lot well after you have taken away the queen. You then tilt the bees which you have driven into the hive, and immediately flour and close up; the flour or peppermint, whichever is used, destroys for the time the bees' smell, otherwise they would fight. This should always be done at night-time, to enable them to settle down before the next day; as it is very tiresome where a good many hives are kept, and robbing might ensue. Should this be the case, narrow the entrance so that only one bee can gain access at a time, and sprinkle a little carbolic powder over the front of the hive. All little vents in the hives should be carefully blocked up. There will be a lot of hives, we are afraid, this year, drawn open by the sun, and if not looked after at once, bad results must follow.

Feeding.—In all operations in feeding, great care must be taken that no syrup is left about; it not only upsets the bees, but encourages the wasps, and when a stock is not very strong, the wasps will soon clear it out, and then look out for another. All pieces of comb should be picked up, to prevent the wax-moth from breeding. This pest seems on the increase very much, so that every stock should have naphthaline placed on the top bars. The honey on the top bars should be left for winter passages, and then scraped off in the spring-time. The advantage of this is, it enables the bees to travel all round the interior, and this, if for nothing else, gives the bees a little exercise in wet weather. We hope to deal in our next with bee-driving.

"WEEK-ENDS IN HOPLAND."—This is the first of a set of small books (the Week-end Series) for the ramblers, and is written and illustrated by DUNCAN MOUL. (Published by the Homeland Association for the Promotion of Touring in Great Britain and Ireland, 53, Wych Street, London, W.C.) We can only say that we hope that other books of the series will be as good as this; as full of pretty pictures and of useful information. The pictures come first, as the letterpress of any guide-book is most valuable when read in the districts under treatment. The author takes his followers from London to Tonbridge and back for a Saturday to Monday cycle ramble, and through the country part of this ride "one can understand how Kent came to be called the Garden of England." For natural scenery, pretty villages, and spots of historic interest, this county can scarcely be rivalled; and as here described they are made interesting, and not merely chronological memorials. The following is the index of the chief "sights" noted by Mr. MOUL: Becket's Well, Otford; Chiddingstone, Hever Castle, Igham Church and Mote, Knole; Oldbury Hill, Otford; Penshurst Church and Place, Plaxtoll, Sevenoaks, Squerries Court, Tonbridge, and its Church and Castle, and Westerham. We must not omit to mention the serviceable little map with which the book opens. On the whole, after studying this volume, we cannot wonder at the native pride of the men of Kent and of the Kentish men. A sketch, however slight, of the geology and physical geography of the district traversed would greatly add to the interest of the journey.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, AUG. 28.	Royal Horticultural Society's Committee. Royal Horticultural Society of Ireland Exhibition. Brighton and Sussex Horticultural Society's Show (2 days).
WEDNESDAY, AUG. 29.	Harpden Horticultural Show.
THURSDAY, AUG. 30.	Dundee Horticultural Society's Show (3 days). Sandy and District Horticultural.

SALES.

MONDAY, AUGUST 27.	Great Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY, AUGUST 29.	Dutch Bulbs, at Stevens' Rooms.
THURSDAY, AUGUST 30.	Great Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY, AUGUST 31.	Great Trade Sale of Dutch Bulbs, and Collection of Orchids from Private Growers, Lilium Harrisii, Palm Seed, Lilies of the Valley, &c., at Protheroe and Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—60°5'.

ACTUAL TEMPERATURES:—

LONDON.—August 22 (6 P.M.): Max. 70°; Min. 57°.

August 23: Showery and thundery weather.

PROVINCES.—August 22 (6 P.M.): Max. 67°, Cromer; Min., 56°, Birkenhead.

The Physic Garden, Chelsea.

It is not long since that those of us who understood the potential utility of this old-world garden, and the uses to which it might be put, trembled lest the builders should obtain possession of the land, and cover it with *quasi* Queen ANN houses. Happily, that misfortune has been averted by the public-spirited action of several learned societies, and we are now likely to see it put to botanical and horticultural purposes, as was the wish of Sir HANS SLOANE, the donor and founder of the garden.

Looking at the small area—less than 4 acres—it is hard to believe that before the establishment of a botanical garden at Kew, it was the sole botanical garden in the metropolis. AITON, the first director of Kew, was at one time the curator of the Physic Garden at Chelsea, and now the whirligig of time has given it a new curator in the person of Mr. WILLIAM HALES, who received his training at Kew. MILLER, the father of English gardening, was one of its earliest curators; and his once famous work, *The Dictionary of Gardening*, date 1730, the original edition is one of its treasured possessions. The old council chamber, in which men famous in their day have met in consultation, and to give lectures on botany and horticulture, including N. B. WARD, of Fern-case repute—a most loveable man, and LINDLEY, one of the founders, and for some years Editor of this Journal.

LINDLEY's lectures were things to be remembered. They were given at half-past eight in the morning, and the students who lived in the central parts of London had to present themselves at that hour. But what a treat those lectures were: the lecturer was not an orator, but as clear and purposeful as a professor could be. Seizing the first flower that

came to hand, and distributing specimens to the students, he pulled it to pieces, drawing on the black-board such parts as were too small for exhibition, describing each part accurately as he went on, pointing out the affinities of the plant and its relationship to others, and impressing on the pupils the various natural orders and their characteristics. The properties of the plant, medicinal and other, were pointed out. All this was told in the clearest fashion without a superfluous word; and the pupil learnt from these demonstrations more about systematic and medical botany than weeks of poring over text-books could have afforded. The lecture over, the pupils were free to roam about the old garden, and under due restrictions to gather for themselves specimens of the medicinal and other plants in bloom. In later years Mr. BAKER used to give a similar course of lectures in the old garden; and examinations for the gold medal, then esteemed as the highest award for the botanical student, were held by N. B. WARD, HOOKER, BERKELEY, and MASTERS.

The old place, now a seed-room and office, will soon have to make way for a much-needed range of glasshouses, so that those who may wish to see what the place is now like should hasten to visit it ere it is demolished.

Near by are some glasshouses much dilapidated which are heated (save the mark) by one of the first hot-water apparatus ever erected in this country, if we omit that of LODDIGES of Hackney. This apparatus is intact, and consists of an ordinary furnace, destitute of an ashpit door, which heated a quadrangular tank furnished with a moveable cover. The tank is about 1½ foot deep, the flow-pipe being inserted near the top, and the return at the bottom.

Another curiosity is a cast leaden tank for holding water, made with a handsome pannelled front—the last thing in the world a modern plumber would make for utilitarian purposes.

The new buildings will render necessary the removal of a fine old specimen of *Ginkgo biloba*, which was evidently treated at one time as a reputedly tender plant, and planted close to the north wall of the garden, being within our recollection trained to the wall, although for many years it has grown unrestrained, and now overtops the wall by fully 20 feet. With the exception of a large glasshouse standing in a shady part of the garden on the western side, the whole of the glass structures are in a ruinous condition, and will be replaced with others. Very few of the plants contained in them are worth retaining for teaching or other purpose, and their places will be taken by plants from botanic gardens at home and abroad, and other sources, and considerable numbers will be raised from seed. A beginning has been made in this direction with *Droseras* and *Liverworts*, at the instigation of Prof. FARMER, who is taking a leading part in the renovation of the garden, acting in concert with a small working committee of members of the various Societies interested in the garden. Professor FARMER intends to form a collection of vegetables, and a beginning in a small way was made this year with a collection of ninety-five kinds, generously given by Messrs. SUTTON & SONS, of Reading. For many years the garden was under the management of ROBERT FORTUNE, and afterwards of THOMAS MOORE, so well known in his generation.

Mr. HALES has already done good work. He has reduced the inordinate width of the walks

from 11 feet, to which they had been extended by ages of trimming and squaring the turf, edgings, to 8 feet, thus giving a considerable additional area to the available land, besides other advantages. He has relaid hundreds of yards of turf margins, which this reduction of width rendered necessary. Beds of botanical plants are being re-arranged, and in conformity with modern ideas and requirements; and in the course of a year or two at the most, this part of the new work will be completed. Considerable progress is already apparent in the furnishing of the beds with the required genera and species.

A bog-garden has been formed alongside of, and abutting on the tank in which are grown the aquatic plants, and some progress has been made in planting it; and among the plants which are establishing themselves are *Primula farinosa*, *Hydrocotyle vulgaris*, *Myrica Gale*, *Samolus Valerandi*, of which a nice clump was in flower; *Cyperus longus*, a strong clump; *Gunnera scabra*, a strong plant, with a sturdy inflorescence; *Triglochin palustre*, several *Orchises*, and *Linnaea borealis*.

Lathyrus magellanicus, or the species they have under that name, is of annual duration. We observed two varieties of *L. Aphaca*, one having white, and the other black seeds; also *Anthyllis tetraphyllus*, a good clump in one of the beds is covered with its singular-looking pods, which are filled with round seeds.

Quite a large collection of the Composite order—*Carduus*, *Cynara*, and *Onopordum*—have been got together, and robust examples were noted.

The gardens have suffered many losses in trees from age and the malign influences of the atmosphere during many years. The two Lebanon Cedars (see fig. 42, p. 147), once the pride of the garden, have succumbed, and the last is awaiting its turn to be taken down. Of trees still healthy, which it is hoped will not be removed without good reasons, may be mentioned a fine *Juglans nigra*, *Rhamnus catharticus*, 30 feet in height; and *Koeleruteria paniculata*, one of the finest examples in the country.

On the walls were observed a nice example of Pomegranate, which flowers well after warm, dry summers; *Styrax officinalis*, a very aged plant, but still in good health; *Aegle sepiaria*, *Diospyros virginiana*, *Rhus juglandifolia*, a rare plant, and handsome withal; *Jasminum odoratum*, yellow-flowered. Some young trees planted in later years comprise the Paper Mulberry, *Celtis australis*, a handsome water-side tree, with small black fruits; and *Ptelea trifoliata*.

The history of the old garden, which is of great interest, is given in Dr. SEMPLE's edition of FIELD's *Memoirs of the Botanic Garden at Chelsea*, and to a considerable extent in our own columns.

The National Co-operative Flower Show.

In her interesting address on opening the fifteenth annual flower show, held in connection with the Great Co-operative Festival at the Crystal Palace on the 17th and 18th inst., the Countess of WARWICK said that chief among the recreative developments of the co-operative movement was "the never-failing interest in gardening, the one pleasure that time does not rob us of, that as the years pass grows ever nearer to our hearts; and that for whole-hearted joy in every day, and every year, in every season, is unsurpassed." In these words the President for the year—for

the first time a lady—struck the keynote of that and the subsequent day's proceedings. One dominant idea in the minds of these earnest co-operators is that it is both expedient and possible to realise that every abode in town or country should have its garden-ground of some

taught him, his plants and flowers will teach him."

The institution of a flower show in connection with this important industrial festival has been the means of producing several congratulatory results. It has created an army of working-

But ideals were soon created, and as the annual exhibitions have waxed in number, ideals and methods of culture have grown into higher conceptions, better productions have resulted, and the best is now the aim of these co-operative gardeners. The high level of quality is



FIG. 43.—ROUPELLIA GRATA: FLOWERS CREAM-COLOURED, FLUSHED WITH ROSE. (SEE P. 152.)

sort, and when this can be brought about, even if the highest level of its possibilities cannot be reached, it will be possible in large measure to say "good-bye to the overcrowding of cities, and the herding together of the workers in circumscribed spaces. Each man will insist on his birthright of light and air, and what the little children's white faces have not

class amateur gardeners up and down the country. The earlier exhibitions in the gardens of the Royal Horticultural Society at South Kensington are not too far remote for some to remember the rudimentary ideals of culture of flowers and vegetables produced on those occasions. Nothing that was then seen rose above the common culture of ordinary cottage gardens.

seen to be more widely manifested as the seasons follow each other, and the bulk of the produce increases in the same ratio.

Another result has been the impetus given to the movement for providing allotment gardens. If the working-man co-operator is to grow for exhibition, he must have a garden. Its value, when properly cultivated, as an adjunct to the home

cannot be over-estimated, and when an area of allotment-gardens is provided near large centres of the population where they are most needed, an important open air space is thereby secured. Happy is it for a community when a landowner or a local authority is found withstanding the blandishments of the builder, who covets the spot for the erection of dwellings. The multiplication of allotment gardens means higher ideals of recreation; the man who finds real and constant pleasure in his garden is under moral discipline, and it not infrequently leads to his becoming a worthier and more useful member of society. The gain from the dietetic point of view, from having fresh and succulent vegetables of his own growth for his table, is surely great. There are other advantages of a social character flowing from the culture of the garden; and the desire to excel on the exhibition-stage on the occasion of the Annual Co-operative Flower Show braces up the moral fibre of the man, and fires him with a laudable ambition.

In some respects the recent Festival and Flower Show fell behind some of its predecessors. Abridged railway facilities, withheld at an opportune moment, kept away industrial exhibits; and this to some extent, with the incidence of the season, affected garden produce. On the first day of the show, professional gardeners and amateurs employing hired labour, submitted their productions; in their case there was little perceptible falling off, while the produce was generally of a high order of merit. These classes of exhibitors were not so much affected by restricted facilities for travelling as the working-men coming from a distance; still, altogether, there were some 3000 exhibits, requiring a length of tabling three-quarters of a mile long. Vegetables largely preponderated; there were over 400 dishes of Potatoes, and the display made by these—so clean, bright, and symmetrical—recalled the Potato exhibitions which were held with so much success at Sydenham twenty years ago. Vegetable - Marrows were a leading feature, they were numerous in the classes for white and green; good table quality was the prevailing characteristic. Beets were numerous, especially in the Turnip-rooted classes; and there were a large number of Beans of all types. Some of the dishes of Scarlet Runners came near to perfection. Peas were fewer than usual, owing to the hot weather; Autocrat was one of the leading varieties. Tomatos, Cucumbers, and Celery, vegetables generally considered somewhat difficult of cultivation by working-men, were much more numerous than might have been expected, and very good. There was abundant evidence that the Onion is a favourite esculent; it was seen in excellent character, and of various types. There were many collections of vegetables also; the quality uniformly praiseworthy.

The working co-operator thrives as a cultivator of flowers, for there were abundant widely representatives. Asters and Stocks led the way in point of numbers; Sweet Peas followed, and there were Marigolds, Zinnias, Mignonette, Roses, Gladioli—a half dozen spikes from Brechin was one of the features of the show; also Roses, Dahlias, Phloxes, &c. The newer forms of *Salpiglossis* were very fine; the working man evidently regards it as the Orchid of his hardy flowers. There were pretty table decorations, showing excellent taste, and no inconsiderable skill.

Fuchsias were the leading plants; some fine specimens were staged. Ivy-leaved Pelar-

goniums were most noteworthy; and it is probable, better specimens of Harrison's Musk were never before seen. The Balsam was there, *Nicotiana glauca*, *Petunias*, *Ferns*, *Coleus*—the variety was great; much attention must have been given to their developments.

There were in addition an interesting industrial exhibition; instrumental and vocal music—the latter by a choir of several thousand voices. There were sports and meetings; there were thousands of visitors; the weather was delightful; and from the Countess of Warwick and Mr. E. O. GREENING, the Master of the Feast, downwards, everybody appeared to be happy, and the last festival of the present century came to an end amid general expressions of satisfaction.

ROUPELLIA GRATA (fig. 43, p. 151).—This is a stove climber rarely seen in gardens, but when it is seen it commands admiration; flowers creamy-white, rose-tinted, deliciously fragrant. The plant is a native of Sierra Leone, and is said to produce the fruit called Cream-fruit, though this point is, we believe, uncertain. We have seen it in flower at Kew, and specimens were exhibited in the spring of the year at the Royal Horticultural Society. It belongs to the Apocynaceæ, which furnish many ornamental species to our gardens.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Fruit and Flower Committees will be held on Tuesday, August 28, in the Drill Hall, James Street, Westminster, from 1 to 5 P.M. At 3 o'clock a paper on "Montbretias and Crocosmias," by M. EMILE LEMOINE, will be read.

THE VINTAGE ON THE CONTINENT.—Reports from many of the Continental wine-producing centres are of a very favourable nature. In France, the Minister of Agriculture prepared an estimate of the vintage, from which it appears that the result promises to be very good in point of quantity. In thirty-five departments good, in thirty fairly good, in four fair, and under average in one only. The outlook in Germany is a very promising one; and a good crop is also expected in Italy. In Portugal the gathering will be later than last year, but the yield will probably be larger. It may be noted respecting the French vintage, that the ripening has been so favoured by atmospheric conditions, that great expectations are formed as to the quality of the wines.

DR. WILSON.—We learn that Dr. WILSON, of St. Andrew's, is visiting California, and has inspected the plantations of Mr. LUTHER BURBANK. We shall hope on his return to have some account of the wonderful work in which Mr. BURBANK is employed. In the meantime, it must be remembered that some of these productions are not suited to this climate.

FENN TRIBUTE.—Additional subscriptions have been received from Mr. J. DOUGLAS, and from Rev. H. H. D'OMERAIN, per Mr. H. G. COX.

MR. FENN, we are glad to hear, is progressing favourably, and desires us to say how thankful he feels to his old friends who have aided him in his troubles. His labours in Potato-raising have been disinterested, and have received no public recognition, though he has moved about among the Fellows of the Royal Horticultural Society and others since 1835. It was in 1837, he tells us, that he planted his first orchard, "grubbed up a lot of worn-out Apple-trees and renovated their sites, 3 yds. in diameter and 2 feet deep, with chopped turves taken from a meadow, and mixed with ditch scourings and road dirt (exactly what the poor old Chiswick garden wants doing to now). As the spring-time waned, this ground, about an acre, became trenched and planted with the then most popular sorts of Potatoes, for the purpose of making selections for improvements from the most promising stools. I lost a

good ten years over that futility. For the last two decades have been endeavouring to cross-fertilise our domestic varieties with wild species from the latitudes of New and Old Mexico. I have succeeded in regard to New Mexico through *Solanum Fendleri*, and as regards Old Mexico thus far with *S. castaneum* (?), by securing last season a pollen-cross from the latter with one of my seedling varieties. Continuity in this Potato-breeding business means deep delvings into the pocket of the inventor."

"JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY."—The August number has been issued, and is perhaps rather less interesting than usual. Mr. NEWSTEAD's paper on "Scale Insects" is, however, of first class rank. The New Charter and the New Bye-laws will, we expect, cause this volume to be frequently referred to in the future. The Bye-laws are not all that can be desired, and the obnoxious Proxy-voting is not quite scotched, but Bye-laws can be revoked or amended or new ones proposed at a general meeting, provided that the new or altered Bye-law be submitted among the whole of the Fellows twenty-one days at least before that meeting. A good many difficulties are thus thrown in the way, probably to prevent too frequent or frivolous disturbance. Some of the "fill up" illustrations show nothing in particular, and are not sufficiently accurate for insertion in the pages of a journal which has won for itself so high a position.

A NEW USE FOR CHERVIL.—Chervil is best known as a flavouring herb when it has reached an adult stage, yet the young seedlings, when about an inch high, form no bad substitute for the familiar Mustard-and-Cress. If the Chervil be sown rather thickly, and be carefully thinned out when at the right stage, enough small salad is obtained without robbing the herb-bed, in which the plants that are left can be allowed to grow to full size. The small Chervil, duly washed and slightly chopped, is useful in a mixed salad, or served singly, or as a flavouring for sandwiches. The taste of it is very delicate and agreeable. Seedling Purslane we have treated similarly and tasted with approval; indeed, very many other plants are, in their young state, quite as inexpensive and palatable as are the time-honoured Mustard-and-Cress.

COOKING OF VEGETABLE - MARROWS.—As the season of Vegetable-Marrows is now with us, here are two very good modes of cooking them, sent us by Dr. E. BONAVIA:—

"(a). 'YOUNG MARROW, PARMESAN FASHION.'—Take as many very young Marrows as you require, cut each in four, lengthwise; stew them with butter, without water, adding salt, till they are quite soft; place them on a hot dish, and powder them rather thickly with grated Parmesan cheese. In the same saucepan put a large spoonful of good stock or gravy; mix in the purée of two or three large Tomatos; pour this sauce on the Marrows, and serve.

"(b). YOUNG MARROW, MILANESE FASHION.—Cut the number required in halves, lengthwise; half boil them in water and salt; remove the interior of each half, chop it up, and squeeze it in a clean rag to remove the water; then fry a chopped Onion in butter, adding the squeezed pulp, thickened with a little flour, and add a tablespoonful of cream, if handy; season with pepper, salt, nutmeg, and grated Parmesan. The whole should be as thick as porridge. When cold, bind the whole with a whipped egg or two. Fill the Marrow-shells with this stuffing; sprinkle over them some grated Parmesan, and bake to a light brown. N.B.—A variation of this is the addition of minced-meat and Sultana-raisins to the stuffing."

OLIVES v. WINE.—An observant English official in Italy has drawn and continues to draw attention to the gradual uprooting of Olive trees in certain districts in Italy, and the substitution thereof of the Grape-vine, the product of the latter becoming

larger year by year at a falling price. In a few years, says the observer, this must end in a glut of wine in the market, selling at prices which cannot prove remunerative to the cultivator; possibly, at that period it will not be possible to make up with Olives for the lee way made by Vine cultivation.

A NEW BELGIAN HORTICULTURAL SOCIETY.—

There has lately been founded, in Belgium, a co-operative horticultural society, the inauguration of which is worth chronicling. The society includes as original members, many of the horticulturists of Brussels and the environs, and many Vine-growers from around Brussels, especially from Hoeyleart, where the cultivation of Grapes under glass is, as is known, an important industry. The object of the society is to maintain a commission agency for the sale, by auction, of cut flowers, fruit, vegetables,

Bag-filling Machine Co., of Fitchburg, Mass., U.S.A., manufacturers of automatic bag-making and bag-filling machines.

The Brown Bag-filling Machine, represented by our illustration (fig. 44), is, as far as we know, the only one of its kind, and is designed for handling flat paper-bags, filling them with measured quantities of dry materials, such as seeds, powders, &c. It measures the material, opens the bag, fills it, gums it, turns the flap, presses it hard down, and holds it till it sticks fast, making the bag tight and secure for the finest material.

The power required to run the machine is less than one-eight horse-power, which may be furnished from any ordinary source of power, or from an electric or other motor. Mounted upon a substantial table, the machine measures $2\frac{1}{2}$ by $4\frac{1}{2}$ feet, and would be easily accommodated in a room 8 feet by 10. The table is supported by a strong frame-

tity is one fixed, 100,000 papers may be run without variation, and without waste or loss.

The saving thus made by putting just the right amount into each bag, and no more, averages from 5 to 10 per cent. as compared with hand-work. The machine will run any size of bag, from one $5\frac{1}{2}$ inches by $4\frac{1}{2}$ inches, to one 2 inches by $\frac{3}{4}$ of an inch, being readily adjusted to any variations between these limits. The paper-bags may have a seam on either side, or a seam on both sides, either with or without a bottom lap; but the flap of the bag should be cut square across, not pointed, and the corners of the flap should be as full as possible, not slashed away. The bag in all cases should be machine-made.

The flow of seed or other material to the machine is regulated automatically, and the seed may be supplied from a bin overhead that will contain material sufficient to last a whole day. Empty bags are supplied without stopping the machine, as also the glue.

The machine runs from fifty to sixty bags per minute and maintains a very high percentage of speed. One record made at the Department of Agriculture at Washington, in January, 1895, showed 505,000 bags run in 162½ consecutive working hours, an average of over 3,100 per hour. Some single day records show averages as high as 3,300 and 3,400 per hour. The idea of a machine for automatically filling flat paper-bags was first conceived by Joseph C. Brown, of Burlington, Vt., U.S.A., who devised and made a model, that was perfected later, and in 1889 the work of construction was begun in Boston by J. C. & B. F. Brown, and a machine was brought to a successful completion, that turned out packets filled and sealed.

The Brown Bag-filling Machine Company was organised early in 1892; and several machines, with important improvements, have been sent out to different parts of the world. At the present day the company has many machines in successful operation in the United States, Canada, Australia, and other countries. The latest model, with many improvements, is now exhibited at Paris, for the first time in Europe. *Nils N. Emitsleef.*

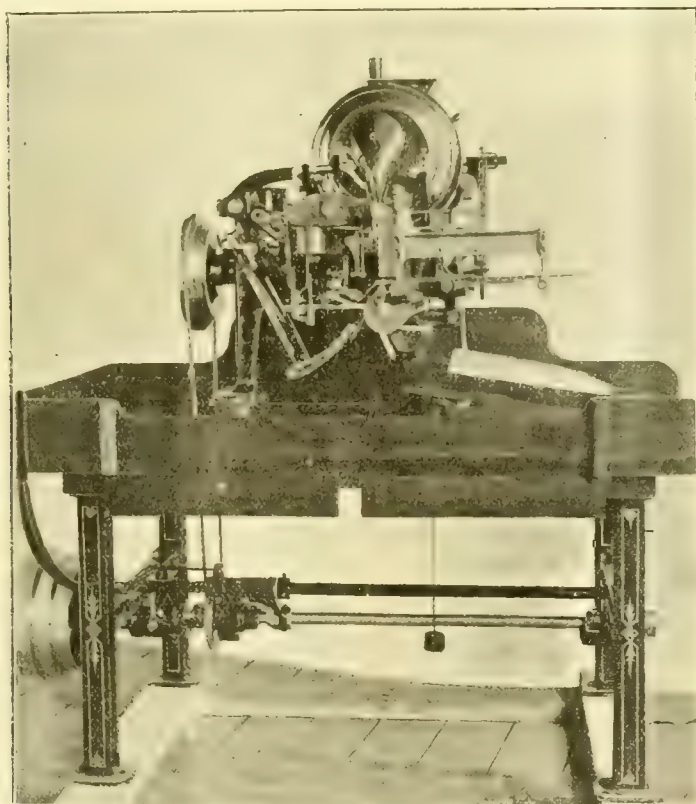


FIG. 44.—A NEW AND VALUABLE MACHINE FOR THE USE OF SEEDSMEN.

and other horticultural and agricultural produce. It is started for nine years under the title, "Société co-opérative horticole, viticole et maraîchère." It is established in Brussels. The society's capital is fixed at 40,000 francs, divided into 400 shares of 100 francs. Article 4 of the statutes declares that, "No one shall be admitted into the society who is not a horticulturist, a gardener, a Vine-grower, a nurseryman, or market-gardener working on his own account."

A NEW, VALUABLE MACHINE FOR THE USE OF SEEDSMEN.

AMONGST the numberless interesting things that are now to be seen at the Great World Fair of Paris, there is a bag-filling machine, that will surely be found most useful to seedsmen. This ingenious machine may be seen at the Central Seed Pavilion of the well-known French seed firm of Vilmorin-Andrieux & Co., group VII., class 39, on the Champ de Mars. The exhibitors are The Brown

work, fitted with countershaft, pulleys, and shipper complete, and is ready to belt direct to any line of shafting. The table is also fitted with a receiving box for seed, and with drawers supplied with tools, duplicate parts, a full set of measures, and everything necessary for the complete operation of the machine.

The machine requires but one operator, generally a girl, to look after it, and runs automatically, discharging the sealed packets at the rate of 3000 per hour, dry, and ready for packing, or for immediate use. The number of bags filled is registered by an indicator attached to each machine, making it possible to keep an accurate account of each day's work, and the number of bags run of each variety, as well as the amount run in an entire season. Any kind of seed that will pour, can be handled by the machine. The seeds do not clog in the hopper, and are not cut or injured in any way. The material is measured with absolute accuracy, and the amount can be readily gauged anywhere from an ounce to a fraction of a grain. When the quan-

LAW NOTES.

A GARDENER AND HIS TESTIMONIALS.

AT the Stroud County Court (Gloucestershire) on Friday last, William Carter, gardener, of Stonehouse, sued F. F. Parker, of Pitchcombe View, for the recovery of two testimonials, for damages amounting to £12 4s. for their detention, and for a week's wages. Mr. J. L. Norris appeared for the plaintiff, and Mr. E. C. Davis for the defendant. Plaintiff stated that he was now in the employ of Mr. E. James Davis, of Stonehouse, and had been a gardener since he was sixteen years of age. During February this year he saw an advertisement in the *Gardeners' Chronicle*, and he subsequently sent Mr. Parker two testimonials, one from Mr. L. F. Page, of Bobbing Court, Sittingbourne, and a second one from Colonel Heyworth, Bury St. Edmunds. These testimonials were worth £20 each to him. Witness was subsequently dismissed, and asked for the return of the testimonials, which were still retained. Examined by Mr. Davis, witness acknowledged that there were discrepancies between the original testimonials and copies (produced). This occurred because he had been in the habit of writing the copies without having the originals before him. He had no desire to misrepresent. Mr. Davis submitted that the detention of the certificates was lawful, plaintiff having obtained the situation by a false certificate of character, defendant was entitled to hold the testimonials for the purpose of bringing an action if necessary against plaintiff. That being so, plaintiff was not entitled to recover damages.—Frank Freeman Parker said that quite suddenly plaintiff burst

into a violent passion, and then alleged that he had been decoyed from London. He was also insolent, and witness then suspended him until he apologised. His Honour gave judgment for defendant, but made no order as to costs. Now that the object of the defendant had been gained, he was of opinion that the testimonials should be handed back to plaintiff. If they were not, he should impound them.

PERRIN'S FLY-TRAP.

At the last meeting of the Royal Horticultural Society a number of wire fly-catchers were exhibited. Our illustration (fig. 45) shows one much reduced in size. The flies enter the balloon through a narrow chink. They regale themselves on treacle or some other pleasant substance, and then find that they cannot escape; for although there is a small aperture at the apex of the intruded cone, the flies seem never to find out that in that way lies escape. We have tried this particular trap, and found it very efficacious; so much so, that we recommend it to those whose fruit-houses are tenanted with flies or wasps. It is to be had of E. Perrin, 72, Chiswell Street, London.

HOME CORRESPONDENCE.

WANTED—A CENSOR.—Such a person seems to be becoming increasingly necessary in relation to the meetings of the Floral Committee, someone who shall have the power to reject as unworthy of notice subjects which only waste the time of the Committee when brought on to the table, as they are frequently of an inferior character and unworthy consideration. The tendency to submit inferior subjects is on the increase, and needs to be checked in some manner. *A Member.*

THE LATE MR. JOHN LAING.—It was quite appropriate that at the meeting of the Floral Committee on Tuesday, the 6th inst., the Chairman, Mr. W. Marshall, should have moved a vote of condolence with the widow and family of the late Mr. John Laing; for Mr. Laing was an old and useful member of this body for a number of years. I think he first became a member in 1862 or 1863. The earliest list I can find is that of 1860–61, but his name does not appear on it. This list gives what I think was that of the first Floral Committee, as it came into existence about 1860. Of the original committee, five who constituted it are still living, namely, Mr. Samuel Ainsworth (Carter & Co.), Rev. H. H. D'Ombain, Dr. M. T. Masters, Mr. William Paul, and Mr. Harry J. Veitch. I think I can, without suspicion of boasting, claim to be the oldest present member of the Committee, in point of time, if not of age, having been first appointed a member in Jan., 1868. *R. Dean.*

VICIA OROBUS AND V. SYLVATICA.—Several times lately I have seen complaints that we do not make enough use of the native flora in ornamenting the wilder parts of our gardens and shrubberies. In this respect I may mention two perennials which are well worth notice—*Vicia Orobus*, De Candolle, and *V. sylvatica*, Lin. Both of these have the merit of preserving their botanical names unchanged for about a century, whilst their relatives of the tribe of *Orobus* have had their surname obliterated, and been scattered abroad till it is hard to identify them. *V. Orobus* I have never seen wild, though it is said to occur in many counties. In my garden it grows 18 inches high, with dense stalks often branched near the top, and clothed to the base with closely growing bright green leaves, each having from ten to fifteen pairs of leaflets, the general effect recalling a *Mimosa*. The stems rise so thickly from a small base, that Virgil's description of the *Amellus* may be applied to it:—

"Uno ingentem tollit de cespite silvam."

The pale blue flowers at the end of June are borne in close tufts in the axils of the leaves, but when the flowers are over the beauty of the plant is not gone, for of the thirty or forty stalks the outermost droop to the ground, so as to form altogether a bright hemisphere of foliage which lasts till the frost; the little branches of brown pods, which do not burst and fly like some *Vetches*, add to its orna-

ment. A shady position raised amongst stones shows the plant at its best. *V. sylvatica* is commoner as a wild plant than *V. Orobus*. I have often seen it in woods in Cheshire, and recollect it as particularly ornamental in groves by the road-side between Monmouth and Tintern Abbey. It is prettily described by Scott in a passage quoted in Sowerby's *British Botany*, though it is a poetic licence to speak of it as entwining the trunks of the Ash and the Elm; but Scott's picture of "its pale and azure-pencilled flower" is very happy. It climbs to a height of 8 or 10 feet amongst low trees and thickets. I have sometimes seen it in open rocky ground, such as Mene hillocks on the Heights of Abraham at Matlock, and the railway embankment between Llandulas and Llysvaen in North Wales, growing hardly more than a foot high, and flowering very densely, but I have never been able in cultivation to imitate this condition. Probably neither of these plants will be found offered in nursery catalogues, but the seed list of Mr. W. Thompson, of Ipswich, would be likely to include both. *C. Wolley-Dod, Edge Hall, Malpas.*

THE GARDENER IN COMIC OPERA.—The gardener has in his time—which dates from Adam—played many parts, in fact as well as fiction. But

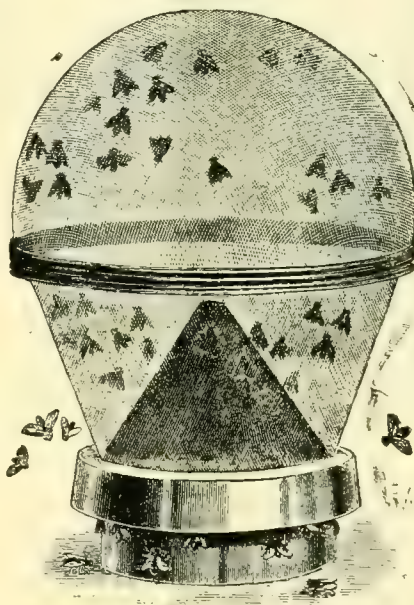


FIG. 45.—A NEW FLY-TRAP FOR THE USE OF GARDENERS AND OTHERS.

once, and once only, has he figured as the title rôle in a comic opera. On Wednesday, February 18, 1761, there was produced at the Théâtre de la Foire Saint-Germain, Paris, *Le Jardinier de son Seigneur*, a comic opera, by M. Sedaine, an Academician, and a man of considerable repute in his day. He was born in 1719, and died in 1797; his chief claims to posterity are not perhaps so much that he was the writer of comic operas, as that he was the librettist of the composer Grétry, but he is probably best of all remembered for the singing of his song, *Richard, O, mon Roi!* at the Court Theatre of Versailles on October 1, 1789, which is a well-known episode of the Great Revolution. One does not fly to a comic opera for practical instruction in any department of life, and in *Le Jardinier et son Seigneur* it is amazing to note how entirely the calling of the chief figure is overlooked. In the first duet, the gardener, M. Senion, it is true sings:—

"Un maudit Lièvre vient chaque matin,
Ronger les plantes de notre jardin;
Avec un bâton de sarment
Je me coule toute doucement,
Pan, pis, pouf, il est à cent pas,"

and so on. The story of the opera is very thin, and the gardener appears in more trouble about his *perruque* than about his garden, and his wife appears to have been a thorn in her husband's side; her running comments on her husband's

remarks being usually of a sarcastic nature, and often very funny. The *Seigneur* appears to have an inclination for falling in love with his gardener's daughter, the beautiful Fauchette, who, however, in the end marries Maître Nicolas, the *barbier*, and, as Madame Nicolas, perhaps lived happily for ever afterwards. It would be an interesting task to draw up a list of the old plays and romances in which gardeners have figured conspicuously. *W. Roberts.*

THE WEATHER IN NORTH WALES.—On Friday, August 3, we had much the same experience here as in other parts of the country. We experienced a violent gale from the north-west, which did considerable damage to forest and fruit-trees in the neighbourhood of Towyn, and the heavy rain laid many acres of ripe corn in the surrounding district. The weather continued rough, and culminated in another storm on August 6, which was even more disastrous in its effects than the preceding gale of Friday. Trees have been uprooted, large branches split off, and on all sides can be seen evidence of this unusual August weather. In the gardens here, although sheltered by trees, much damage was done to the Apple crop. The finest fruits were shaken from the trees, and some trees denuded entirely of fruit. Apart from the wind, the rain was very welcome to garden produce, as on our light porous soil everything was suffering from the drought. *C. S., Ynys-y-Maengwyn, Towyn.*

"NOBLE" CHERRY.—In reference to "A.D.'s" note on late Cherries, I may say that it is very difficult to be sure about naming them, unless one sees the trees growing, and can note their style of growth, fertility, &c. It may be that "Noble" is quite a new kind, and whether or no, it is the finest black Cherry I know, and from the raiser's observations, it has been in the same position from a seedling. I have a very high opinion of it. As regards local names, I have hitherto classed "Turks" and clusters as the same, but my stock has always been kept separate, and this season I have described them as distinct. At the present time we have two Black Cherries from East Kent as extra fine kinds, but they are only locally named, and may prove to be old and well known sorts. The Black Bohemian Biggareau is very close to the "Turk" (Turkey Black), but I cannot at present say they are the same—time will prove; and for purpose of sale we find ourselves obliged to adopt the local names to meet our clients' wants. The cluster (of some) is the "Carone." *George Bunyard, Maidstone.*

A PHARMACEUTICAL ABSURDITY.—For some years past, after repeated trials with various fumigatory insecticides—and "trials of patience" in many cases when I found my best Ferns browned and spoilt for the season by the fumes, I was fortunate enough at length to reap success with the well known XL-All, which did the business effectually, without accompanying damage. I have read from time to time recently that some action had been taken by the Pharmaceutical Society in this connection, which debarred the ordinary horticultural sundriesman from retailing this remedy, and placed its sale in the hands of the chemist under the usual "poison" regulations. What is the result? Finding an invasion of white-fly impending, I, forgetting this piece of professional interposition into matters foreign, try to obtain the stuff from several nurserymen in the city, who inform me that not only cannot they sell it to me themselves or get it for me, but they have not the remotest idea where it can be procured! This, I perceive at once, is due to the fact that they naturally will not facilitate a sale by the chemist, who has been installed as a monopolist of an article in their own particular line. Having thus given the legitimate trader his chance, I, sorely against my will, apply to all the chemists (four) which are within easy distance. Not one of them knows the article, even by name. Result, my insect foes grow stronger for a day or two, and assume in greater numbers the flying and egg-depositing state, which I was aiming at forestalling. I then search the advertising columns of the various gardening papers, and find the advertisements dropped there-out, and eventually only succeed in tracing the source of supply through an old number. I am not yet, however, able to obtain the needful, even when I take half-an-hour's journey to the manufacturer's dépôt. No! All he can do is to give me the name of a chemist in the city; and finally repairing thither, I obtain the coveted article, after formally signing the chemist's book and giving my address.

Meanwhile, I ascertain from one source and another that, pending a further decision which is hoped for, the manufacturer is afraid of offending his possibly restored customers in the horticultural trade by advertising, and giving any chemist or chemists as the sellers; and the chemist, on the other hand, selling a thing out of his line, does not consider it worth his while to advertise it himself. Consequently, in ninety-nine cases out of a hundred, the would-be buyer gives up his quest, and resorts once more to his experiments with other remedies, and possibly experiences once again the failures and disappointments which he had thought ended once and for all. I do not write this in any way as an advertisement; the only interest I have in the remedy is that it has proved a success, which others have not done, without the accompaniment of more damage than the insects themselves would have occasioned, and consequently I resent, as do many others, the interference of one trade with another which has the result of rendering a tried article almost unobtainable, and is based upon no really rational ground. *Chas. T. Druery, F.L.S., V.M.H.*

EARLY HISTORY OF THE DAHLIA.—The short note on p. 139 reminds one that there is some misconception concerning the early history of the Dahlia in England, it being supposed that Lady Holland's seedlings from the parcel of seeds she sent home in May, 1804, were immediately lost, and also that the earliest double Dahlias were introduced from the continent in the winter of 1814-15. An interesting communication from Mr. Buonianti, Lord Holland's gardener, giving the history of these historical seeds and their resulting offspring, is appended to the last volume of MacDonald's *Dictionary of Practical Gardening*, 1807, and two varieties are figured by Sydenham Edwards, the illustrator of the book. The gardener had the good sense to sow only a small portion of the seeds in 1804, retaining them till the spring of 1805, when the whole was sown, and from the plants which flowered seed was saved, which produced another batch of seedlings in the year following. The variability of the Dahlia was noticed by Mr. Buonianti, and he notes that two varieties had "arch-double" flowers, and others had more than the normal number of petals. The old plants were wintered in a cool greenhouse, and had no heat to start them; and a root that had been left in the open ground, coming up in spring and growing as vigorously as the others, confirmed him in the opinion that coddling the Dahlia was a mistake. He also propagated plants from cuttings. Hogg, in 1820, alludes to these as the origin of the English stock of Dahlias, though the finest varieties were then introduced from France. *B.*

SOCIETIES.

ROYAL HORTICULTURAL: CHISWICK.

AUGUST 16.—Pleasant weather on the above date helped to bring a full quorum of members to Chiswick to examine Potatoes in spite of its being the holiday season, when gardeners flee to the seaside or elsewhere. No less than 130 stocks or varieties of Potatoes have been grown this season, and the Fruit and Vegetable Committee think that in future these great numbers may be severely reduced, seeing that so many are of such poor value. The Committee also rigidly ignored any that were sent in under letter or number only, and that practice will continue to be adopted, indeed it is hoped that the Council will instruct its superintendent to refuse all varieties that are not sent in under name; and then the numbers from any one person to be severely limited. P. T. Crowley, Esq., was Chairman, and there were present: Messrs. J. Wright, G. Kelf, J. Willard, A. F. Barron, W. Pope, J. Cheal, Esling, and A. Dean. The early varieties, sixty in number, had been lifted and laid out in lines to show crop; several were ordered to be cooked. Then attention was given to the later ones, but not a few of these still showed such strong late green growth that it was resolved to leave them to a future date. Of all the varieties tried one only showed any signs of disease. Many of the later ones were disappointing in their tuber produce; ultimately thirteen varieties in all were cooked, and their table quality tested as a result. Awards of Merit were given to Early Puritan, now well known and very good; and Collier's Glory, round white, good cropper; General Roberts, round white; Sir J. Llewellyn, flattish white, and a wonderful cropper. Tommy Atkins, Kate Henderson, and Twentieth Century, fine rounds, are to be cooked again when ripen.

CARDIFF GARDENERS' ASSOCIATION.

AUGUST 13, 1900, will long be remembered by the members of the Cardiff Gardeners' Association as a red-letter day in the history of their Society, for on that date a delightful and instructive excursion was made to the Royal Gardens, Kew.

The programme for the day was a visit to the Royal Gardens, to Gunnersbury House, and to Gunnersbury Park Gardens (the residence of Mr. Leopold de Rothschild), and various places of amusement in London at night. The party, numbering fifty, left Cardiff at 5.50 A.M., and reached Kew at 12.30 P.M., where a luncheon was partaken at the Rose and Crown hotel, the chair being taken by Councillor PERKINS.

At 2 P.M. a move was made to the Royal Gardens, where two hours were spent, the chief attraction being the Lily-house, in which grows the Victoria Regia and the double Cocoa-nut Palm. The party then re-assembled at their hotel, and a start was made for Gunnersbury House and Park Gardens, where the members were met by Messrs. Camp and Quantin on behalf of Messrs. Hudson and Reynolds (who were absent). These gentlemen conducted the party to the mansion, where (by the desire of Mr. Leopold de Rothschild) a welcome tea was in readiness.

The party were then taken to view the glasshouses, conservatories, and pleasure grounds, and everyone came to the conclusion that it was a model English garden. After a few hours spent in these delightful gardens, a start was made for London, where the remaining time was spent. The party reached Cardiff at 6 A.M. Tuesday morning, everyone satisfied with the excellent arrangements made by the honorary secretary, Mr. John Julian.

THE ENGLISH ARBORICULTURAL.

THE ANNUAL CONFERENCE.

THIS Society held their yearly meetings, from 14th to 17th inst., at Manchester, making the Grand Hotel their headquarters. On Wednesday, 14th inst., about 150 members and many friends paid a visit to the nurseries of Messrs. Wm. Clibran & Son, Altrincham, which were minutely inspected, especially the Forest-tree Department, and from the general opinion expressed, that which was observed seemed to be quite a revelation to many of the visitors. Visits were paid to several places of interest, including the Dunham Park (by kind permission of the Countess of Stamford and Warrington), where some grand old specimens of forest trees were measured, and in several cases photographed for record in the Society's Journal.

The whole party were afterwards entertained at luncheon by Messrs. Clibran, to whom a hearty vote of thanks was accorded, coupled with the name of their Mr. J. R. Brown (in the absence of Mr. Clibran, who is away from home), the leader of the party throughout the day. In the evening the annual dinner took place at the Grand Hotel, at which the principals of Messrs. Clibran & Son were the guests. The Lord Mayor of Manchester honoured the company by his presence, and responded to the toast of the city and trade of Manchester. Chatsworth and Haddon Hall were visited on Thursday and Friday respectively.

ROYAL HORTICULTURAL OF ABERDEEN.

AUGUST 16, 17, 18.—How widely different were the experiences this year of the members of this Society in comparison with those prevailing last year, when the scene which met the gaze of the visitor on the opening day was one of chaos and destruction. The effects, however, of last year's destruction were clearly discernible in the number of entries, and especially was this notable in the pot-plants division, it being found impossible to replace within a year many of the valuable plants ruined last year. Nevertheless, the entries numbered upwards of 1200, and a splendid spectacle they presented in the spacious marquees erected for their accommodation.

Pot Plants.—The exhibition made in this division was an exceedingly fine one. The feature in the professional section was the group of plants entered in the class for "best grown plants arranged in a circle of 10 feet diameter." Although there were only two entries, the exhibits were of the highest degree of merit. The 1st prize was awarded to Mr. Alex. Grigor, gr. to Mr. A. O. GILL, of Fairfield, Aberdeen; and the 2nd to Mr. John Proctor, gr. to Sir WILLIAM HENDERSON, Devanha House, Aberdeen. The merits of the respective exhibits were very much on a par, and it was only through Mr. Grigor's superior arrangement that he carried off the highest prize. The outstanding plants in Mr. Grigor's group were Liliums, Crotons, Dracenas, Orchids, and Begonias. In Mr. PROCTOR'S group a fine *Dasylium* was in the centre, surrounded by Liliums, Ixoras, Bougainvilleas, Alcasias, and Orchids.

Keen competition took place in the class for stove or greenhouse plants, and here Mr. JOHN PROCTOR carried off premier honours with a magnificent exhibit. The Fern classes were well filled, most of the specimens being in splendid order. In this class, Mr. John Sim, gr. to Mr. MURRAY, of Glenburnie Park, Aberdeen, and Mr. ALEX. GRIGOR, Fairfield, carried off highest honours.

For Petunias, Mr. JOHN M. SIMPSON, Varvillback, Aberdeen, and Mr. ALEX. GRIGOR were chief prize winners; while for Gloxinias, Mr. JOHN SIM, Glenburnie Park, and Mr. S. ROBERTSON, Ferryhill House Gardens, were best. Other gardeners well worthy of mention in this division were Mr. ALEX. DOUGLAS, Belhelvie, zonal Pelargoniums; Mr. A. GILLESPIE, Aberdeen, Fuchsias; and Mr. JAMES ANDERSON, Aberdeen, early-flowering Chrysanthemums.

Cut Flowers.—A fine display of Roses was witnessed in this

division, and the marquee devoted to it proved very attractive to the visitors. Messrs. D. & W. COLLIE, nurserymen, Dundee, carried off premier honours for Roses among nurserymen, their blooms of Killarney being of special good quality. In the professional gardeners' section, Roses and Cactus Dahlias were very good, and competition was keen. For twenty-four Roses, Mr. GEORGE McLENNAN, gr., Fetteresso Castle, Kincardineshire, was 1st. Among other exhibitors taking prizes were Mr. W. MILNE, Corsindae, Midmar; Mr. ANDERSON, Aberdeen; and Mr. W. L. JOHNSTON, Ardenham, Asters and Marigolds were above the average; while hardy herbaceous flowers made a meritorious display. Among Carnations, Stocks, and Sweet Peas, some excellent blooms were shown. The outstanding winners for Dahlias were—Mr. GEO. MILNE, Cluny Castle; Mr. G. McLENNAN, Mr. A. GRIGOR, and Mr. J. D. CROZIER, Durriss. Among others worthy of mention in this division were—Mr. W. L. JOHNSTON, Ardenham, for Asters; Mr. J. GRIEVE, Woodside, for Marigolds; Mr. A. DOUGLAS, Middlemuir, for herbaceous perennial flowers; Mr. J. ANDERSON, Aberdeen, for Pansies; Mr. W. SCORGIE, Rubislawden House, Aberdeen, for twenty cut flowers of species distinct; Mr. A. GRIGOR, for trusses of zonal Pelargoniums; and Mr. JOHN BROWN, Blackhall Castle, for model garden and bedding design of flowers or foliage plants.

Fruit.—All over the display in this division was decidedly backward, owing to the lateness of the season. Grapes were admittedly the most conspicuous feature, and those shown by Mr. A. HUTTON, Usan House, Montrose, and Mr. ALEX. GRIGOR, Aberdeen, were well worth the honours conferred. The best collections of fruit were exhibited by Mr. A. HOWIE, Drumtochty Castle, Fordoun, and Mr. A. HUTTON, Usan House, Montrose. Among the other 1st prize-takers were Mr. G. TAYLOR, Inchgarth, Culter, for hardy fruits; Mr. S. COWIE, Raeden, Aberdeen, for Strawberries and Red Currants.

Vegetables.—Taken all round, the display of vegetables was very good, both in numbers and quality, especially those shown by Mr. J. Grant, gr. to Mrs. CRAWFORD LESLIE, Rothienorman, who worthily won in the class for the best collection of ten varieties of vegetables; indeed, the display made by the professionals was most meritorious. Especially so were those shown by Mr. ALEX. PATERSON, market-gardener, Ruthrieston (collection of nine varieties).

In the amateur and working-class divisions, very good displays were made, Mr. J. LENNIE, Bannermill, showing the best side-table of greenhouse plants, in the former class. Ferns were also well shown here.

Special Florists' Displays.—MESSRS. JAMES COCKER & SONS, Aberdeen, occupied a large tent, and were awarded the Gold Medal for the best nurseryman's display. The firm's beautiful collection of Cups, Medals, &c., was shown off to advantage amongst the superb wreaths, crosses, bouquets, &c. Following the floral display was a fine bank of herbaceous perennial cut flowers, extending to 40 feet by 9 feet. At the north end of the tent, immediately following the herbaceous flowers, Messrs. COCKER exhibited a gorgeous display of Roses, arranged in baskets. Gladioli and Cactus Dahlias were also represented in fine order.

MESSRS. WILLIAM SMITH & SONS, Burnside Nurseries, Aberdeen, had a fine exhibit, the principal feature of which was a table of floral work, bouquets, and baskets of choice exotics.

MESSRS. BEN REID & CO., Aberdeen, were also to the fore with an exhibition which included a variety of pot plants. Several fine examples were on show of the new *Watsonia Ardani*, which is almost entirely new to the north. Gladioli, Sweet Peas and various herbaceous plants were shown. They also showed hardy Conifers and deciduous plants largely.

The show was a great success, and the Society's exchequer was well filled. Thanks to the assiduous care and forethought of the courteous Secretary, Mr. BENNET, Advocate, who was on the ground all the time, everything went off satisfactorily. *W. K.*

TROWBRIDGE HORTICULTURAL.

AUGUST 15.—Trowbridge has had its flower show for fifty-one years, and the interest in them does not abate. The holding of the show forms a gala day for the district, the people flocking into the town from the surrounding villages; Bristol and Bath send their contingents.

The exhibition was held as usual in the Town Field; the day was fine. Trowbridge keeps up its reputation for Fuchsias, and some fine specimens were staged on this occasion. Mr. G. TUCKER, florist, Helperton Marsh, has become the champion Fuchsia cultivator, and was on this occasion placed 1st for six and four specimens, all large, well grown and bloomed plants. In his six he had of dark varieties Charming (one of the most useful Mr. J. Lye ever raised), Doel's Favourite, and Final. Light varieties were Mrs. Bright, Tucker's Favourite, a free-growing and blooming variety; and Arabella. The 2nd prize for six went to Mr. H. CHISLETT, gr. to E. T. FOXROPER, Esq., Hinton Charterhouse, who had plants of good growth, but whose flowers were small. Mr. H. POOCK, Trowbridge, was 3rd. Mr. TUCKER'S 1st prize four varieties were Western Beauty, light; Mrs. Molesworth, double-white corolla; Charming, and Mrs. H. Roberts. Mr. CHISLETT was 2nd, having better bloomed examples than he had staged in the preceding class; Mr. H. POOCK was 3rd, with much better examples than we are accustomed to see at leading provincial exhibitions.

In a tent set apart for amateurs and cottagers there were some excellent Fuchsias. All classes grow them well in this Wiltshire town.

Next in importance to the Fuchsias came the stove and greenhouse plants; and though these fell a little below the

usual mark, owing to the date being earlier than usual, they were still very good. Mr. H. Matthews, gr. to Sir W. R. Brown, Bart., Trowbridge, was as usual 1st with twelve specimens in flower; they were large and well-balanced; chief among them, *Allamanda nobilis*, and *A. Williamsii*; *Ericas* *Eweriana* *superba* and *Austrian*; *Ixora amabilis*, *Clerodendron Balfourianum*, &c. Mr. Geo. Tucker was 2nd, chief among his plants were *Statice Gilberti*, *Bougainvillea Sanderiana*, *Dipladenia crassinoda*, and *Stephanotis floribunda*. Mr. G. Hallett Bath, was 3rd. But Mr. Tucker came in 1st with six specimens, having in good character *Bougainvillea glabra*, *Erica Eweriana* *superba*, *Dipladenia profusa*, and *Allamanda Hendersonii*. Mr. H. Matthews was 2nd, with three specimens; Mr. Tucker was also to the fore, here he had in very good character *Statice Gilberti*, *Allamanda nobilis*, and *Bougainvillea glabra*. The best specimen flowering plant was a fine *Dipladenia Brearleyana* from Mr. G. Tucker; Mr. Matthews almost equal with *Clerodendron Balfourianum*. The best specimen foliage plants was a fine *Kentia Fosteriana* from Mr. Matthews; Mr. G. Hallett came 2nd, with a variegated Pine-apple, handsomely coloured.

Cockscombs were good, indeed it was pleasant to see these old-fashioned subjects in such good character. Zonal Pelargoniums as exhibited by Mr. Tucker were very fine; and Mr. Matthews' six Heaths were decidedly praiseworthy. Some excellent Gloxinias were also shown. Single and double-flowered Begonias were shown in good character; Mr. G. Tucker had the best six plants of single; and Mr. H. Chislett the best six plants of double; in both cases they were well grown and bloomed. *Codiceums* were mainly representative of newly-introduced plants, and *Campanula Mayi* was also shown in this class. There were also two classes for groups of plants arranged for effect. Excellent plants of Pelargoniums and other subjects were shown by amateurs and working-men.

The best nine foliaged plants came from Mr. H. Matthews, well-grown Palms and *Codiceums* preponderating; Mr. G. Hallett was 2nd. The class for twelve Ferns brought a keen contest between Mr. A. P. Stancomb, the President, and Mr. Geo. Tucker; eventually the two collections were placed equal 1st, though Mr. Stancomb's plants showed the finest development, both displayed excellent cultivation. Other foliaged plants were represented by *Coleus* and *Caladiums*.

Cut flowers included Asters of the quilled type, also the flat-petalled Victorias and Comets, the latter very good.

Roses.—There were several classes for Roses; the best twelve trebles came from Messrs. J. Townsend & Son Worcester, who had in good character for the season of the year Mrs. J. Laing, Souvenir de S. A. Prince, A. K. Williams, Catherine Mermet, Caroline Testout, Duchess of Bedford, The Bride, &c. Mr. J. Mattock, nurseryman, Oxford, was 2nd, his best blooms were Maman Cochet, and its white variety, Horace Vernet, Niphetos, &c.

With thirty-six distinct, Messrs. J. Townsend & Son were again 1st, chief among the blooms were Mrs. J. Laing, Caroline Testout, Augusta Rigotard, Duke of Wellington, Fisher Holmes, Victor Hugo, The Bride, Maman Cochet, Beauty of Waltham, &c. Mr. J. Mattock was again 2nd, his leading flowers were Duchess of Bedford, A. K. Williams, Horace Vernet, Maréchal Niel, Mdle. Eug. Verdier, Maman Cochet, &c.

Messrs. E. Cooling & Son, Bath, had the best twenty-four varieties, staging in good form Mrs. H. Turner, Charles Lefebvre, Horace Vernet, Alfred Colomb, Maréchal Niel Mdle. Eug. Verdier, White Maman Cochet, &c. Mr. J. Mattock was 1st.

With twelve varieties, Mr. Mattock was 1st, and Messrs. Townsend & Son 2nd.

The best twenty-four blooms of Tea Roses came from Messrs. Townsend & Son; the most noticeable were Edith Gifford, Madame Cousin, Comtesse de Nadaillac, Catherine Mermet, Souvenir de S. A. Prince, Francis Kruger, and The Bride. 2nd, Mr. J. Mattock.

Mr. Geo. Garraway, Bath, was 1st with twelve Tea-scented, and Messrs. Townsend & Son 2nd.

Dahlias, owing to the season, were not up to the usual mark, the blooms being small and unfinished. The best twelve of show varieties came from Messrs. J. Cray & Son, Frome; Messrs. Keynes & Co., Salisbury, were 2nd.

The best twelve bunches of Pompons, and also of Cactus varieties came from Messrs. Cray & Son; Messrs. Keynes and Co. taking the 2nd prizes in both classes. Gladioli, Pansies, Carnations, and Picotees were also shown; as well as hardy flowers and stove and greenhouse subjects, all of which helped the general display.

Floral decorations included epergnes, also fruit and flowers in combination; dinner-tables, bouquets, &c., all very pretty and highly attractive to the lady visitors. There were also wild flowers in collections, bunches of Hardy Annuals, &c.

Fruit was scarcely up to the usual standard at Trowbridge. Mr. W. Stronell, The Gardens, Rood Ashton, was 1st with ten, and also with six dishes. In these classes, he had Muscat of Alexandria and Black Alicante Grapes; Dymond and Walburton Admirable Peaches; Stanwick Elruge and Pine-apple Nectarines, Plums, Melon, &c. Mr. Bible, gr. to H. H. Prince Hatfield, Draycott Park, Sutton Benger, was 2nd with ten dishes, and Mr. G. Pym with six dishes. There were good Grapes in several classes, also Apricots, Melons, Plums, Cherries, Peaches, dessert and culinary Apples. Among the former, Beauty of Bath and Astrachan were the best; and of culinary varieties, Lord Suffield and Peasgood's Nonsuch.

Vegetables were very good, as they always are in the west of

England, climate and soil alike appearing to suit them. There were excellent collections competing for the special prizes offered by Messrs. Sutton & Sons, Reading; Webb & Sons, Stourbridge; and Toogood & Sons, Southampton. There were many classes, and the cottagers came out in strong force. Altogether, the fifty-first exhibition of this society appeared to be as successful as any which has preceded it.

SHROPSHIRE HORTICULTURAL.

EXHIBITION AT SHREWSBURY.

AUGUST 22, 23.—The annual shows held at Shrewsbury by the Shropshire Horticultural Society are still the largest and finest to be seen in the provinces. Since 1875, the year when the Society was established, the management has been so energetic and intelligent, that there has been almost uninterrupted progress. Its financial position has improved year by year, and there has been shown the greatest desire to share this increased prosperity with the exhibitors; consequently the exhibits have showed an increase in number from year to year.

On the present occasion, the amount of prize money offered for competition amounts to about £1,000, with Gold and Silver Medals, and the competitors for these prizes include the most successful cultivators throughout England. It would be impossible to deny that such an exhibition as that opened on Wednesday at Shrewsbury has a great educational influence upon the many thousands of visitors that always attend. Its influence is one for the extension of horticultural practice, and in the direction of higher cultivation. The plants, fruits, and flowers exhibited there are as nearly perfect in respect to cultivation as it is possible to obtain them, and many a country gardener, as well as thousands of amateurs, are stirred by their excellence to greater efforts than they have hitherto made.

The means that provided such liberal prizes are obtained in a large measure from a class of people who have little sympathy or liking for so unexciting a pursuit as gardening, and who attend the Shrewsbury Show in order to see the many attractions, and sports held upon the same day in the same beautiful grounds, known as the "Quarry."

It is regrettable that it should be impossible to attract the immense number of people one meets at Shrewsbury by a display of horticulture alone, but it may be hoped that on each occasion many of those who have come merely to see the sports, are encouraged to make some start, and to take an interest in gardening, by the splendid exhibits they see in the tents.

There were six large marquees provided, and all of them were well filled. That containing the large groups of miscellaneous plants arranged for effect, and the specimen stove and greenhouse plants, was 250 feet long, and 60 feet wide, excepting in the centre, where in the shape of a cross, the width was that of 120 feet. Another tent in which the principal exhibits were fruit and cut flowers had a length of 300 feet, and varied from 50 feet to 100 feet in width. Most of the vegetables were accommodated in a tent 120 feet x 30 feet, and cut flowers again filled another one 100 feet x 35 feet. Miscellaneous exhibits from amateurs were contained in a tent 150 feet x 42 feet. Wild flowers, &c., and various exhibits from cottagers, in one 150 feet x 30 feet.

The evening preceding the show was not too promising; rain fell occasionally, and the glass was falling. The night was much worse, for there were frequent storms, and a perfect deluge of rain. On Wednesday morning, however, the sun shone early, and the secretaries, who had almost given up hope on Tuesday night, then thought that things would not be so very bad; and this, although it was expected that the clouds that passed over our heads frequently would produce occasional showers. This was what happened, and there were several very heavy showers during Wednesday; and the rain at times found its way into the tents. As we walked through the tents on Tuesday night, and saw the immense amount of work occasioned by the arrangement—the building up it might almost be called of the groups of plants arranged for effect, some idea could be obtained of the thoroughness with which the exhibitors perform their tasks; but some of us could see in the fruits and specimen plants shown, evidence of most painstaking cultivation during the past year and previous ones. Never were specimen plants better shown at Shrewsbury, nor has any previous exhibition in all respects excelled the one held this week.

Messrs. H. W. Adnitt and W. W. Naunton, the Honorary Secretaries, have worked hard and succeeded. The greatest courtesy has been extended by each of them to everybody, and to their tact and energy must be due the extraordinary success that has been obtained and retained. We took occasion last year to reproduce the photographs of these gentlemen (see *Gardeners' Chronicle*, August 26, 1899).

FRUIT.

CHAMPION CLASS.

Collection of Twenty-four Dishes.—The principal fruit class was one for twenty-four dishes of British-grown fruits, arranged upon a space 10 feet by 4 feet 6 inches. The 1st

prize offered was £25 and the Society's Gold Medal; 2nd prize, £20; 3rd prize, £15; 4th prize, £10. Pines were excluded from this class. The fruit was judged exclusively upon its merits, and prizes awarded accordingly. Additional prizes were also awarded to exhibits in this class, and in all those for collections of fruits, for decorations used, and general setting up.

The Earl of Harrington, Elvaston, Derby (gr., Mr. J. H. Goodacre), has the honour of winning in this extremely exacting class. His Grapes consisted of Canon Hall Muscat, Muscat of Alexandria, Black Hamburgh, and Madresfield Court; Pears, Souvenir du Congrès, and Triomphe de Vienne; Melons, Countess (2), Vicar of Bath, and Hero of Lockinge; Peaches Royal George and Bellegarde (several dishes); Apples, Worcester Pearmain (uncommonly pretty); Plums, Jefferson; Nectarines, Elruge and Pitmaston Orange; Figs, Brunswick. Below is appended a table showing the points awarded each dish:—

Apples, points gained	5½	Points possible	7
Figs	6	"	7
Grapes	6½	"	10
"	6	"	10
"	8	"	10
"	7½	"	10
"	9½	"	10
"	9	"	10
"	8	"	10
"	7½	"	10
Melon	6	"	8
"	6½	"	8
"	6½	"	8
"	5	"	8
Nectarines	4½	"	8
"	5½	"	8
"	7	"	8
Peaches	5½	"	8
"	6½	"	8
"	6	"	8
"	5½	"	8
Pears	7	"	8
"	6½	"	8
Plums	5½	"	6
Total	157½	Total	208

Sir J. W. Pease, Bart., Guisboro, Yorks (gr., Mr. J. McIndoe), was 2nd for the collection of fruit, and for the ornamentation employed, winning 134½ points out of the possible 208, for quality of fruit only. In this exhibit some of the Peaches were very good, and Pears excellent. One dish of Plums gained 5½ points from a possible 6 points; but the Grapes were hardly so good as in the other exhibit; 3rd, Lady Henry Somerset, Eastnor Castle, Ledbury (gr., Mr. G. Mullins), who gained 12½ points; and was also 3rd prize-winner for the decorations used. There were five exhibitors, and 4th prize was gained by the Hon. Mrs. Ingram, Temple Newsam, Leeds (gr., Mr. R. Davies), who gained 121½ points.

Collection of Twelve Dishes.—There was grand fruit shown in this class, and as in the previous one, it was judged independently of the decorations. Mrs. F. New, York House, Malvern (gr., Mr. J. Jones), won 1st prize, and the following were his varieties: Grapes, Madresfield Court, Gros Maroc, and Muscat of Alexandria; Peaches: Stanwick Elruge, Violet Hatie, and Stirling Castle; Apricot, Moor Park; Fig, Brown Turkey; Plum, Grand Duke; Apple, Beauty of Bath; and two fine Melons. The fruits in this exhibit were of very general excellence. In respect to the decorations employed, 2nd prize only was gained. The collection adjudged to be next in value was one from Lord Bagot, Blithfield, Rugeley (gr., Mr. T. Bannermann), who had an exhibit that closely approached in merit the one already noticed. Splendid Peaches, Nectarines, Figs, and Cherries were shown, and the Muscat of Alexandria, Madresfield Court, and Gros Maroc Grapes were likewise of satisfactory quality. No prize was gained by this exhibitor for the decorations employed, which in this case were very scanty; 3rd, the Hon. Mrs. Ingram, Temple Newsam (gr., Mr. R. Davies), who included a nice Pine-apple, a fruit omitted from both 1st and 2nd prize collections. The Hon. Mrs. Ingram also gained 3rd prize for her decorations, but the 1st prize for decorations was won by the Earl of Harrington, whose collection of fruit was disqualified, owing to a slight disagreement with the schedule. Under the circumstances an extra prize was awarded.

Collection of nine dishes, Pine excluded (open to residents in Salop only).—There were five competitors in this class, and the 1st prize was won by Rev. T. M. Bulkeley Owen. He had Foster's Seedling and Madresfield Court Grapes, Grosse Mignonne and Hale's Early Peaches, Early Rivers Nectarines, Shipley Apricots, Prince Englebert Plums, Jargonelle Pears, and Hero of Lockinge Melon. For the decoration of this exhibit the 2nd prize was awarded. The next collection of fruit in point of quality was one from H. H. France Hayhurst, Esq., Overley, Wellington (gr., Mr. Bremmell), his Apricots were very fine, as were his Alnwick Seedling Grapes, Prince of Wales and Lord Napier Peaches, and Lord Napier Nectarines. 3rd, Lord Trevor, Brynkymalt, Chirk (gr., Mr. W. Davies), whose Peaches, Nectarines, and Cherries were most praiseworthy. Miss Wright, of Halston Hall, Oswestry (gr., Mr. C. Roberts), gained 1st prize in this class for the decoration employed, but failed in respect to the fruits exhibited.

The best collection of six dishes of hardy fruits from Salopians was only one from J. B. Wood, Esq., Henley Hall, Ludlow (gr., Mr. H. Hunter), and his fruits were very fine indeed. They included Jargonelle Pear, Superlative Raspberry, Lord Derby Gooseberry, Irish Peach Apple, Irish Grape Currant

and Morello Cherries; 2nd, Mrs. WRIGHT-BOYCOTT, Nottingham, Wolverhampton.

There were several classes for Apples, Pears, and Plums, restricted to residents in Salop, and each of them were well contested; the fruits generally being of high quality.

DESSERT TABLE COMPETITION.

As last year, there was a class for a dessert-table, 10 feet by 4 feet 6 inches, decorated with plants in pots, cut flowers, and furnished with not more than fifteen dishes of fruit, selected from a list published in the Society's schedule. This class produces a very charming effect. There were four tables on this occasion, and it was evident from the crowded state of this part of the fruit-tent that the public were greatly attracted by these exhibits. The 1st prize was awarded to the Earl of HARRINGTON, Elvaston Hall, Derby (gr., Mr. J. H. Goodacre). The varieties he showed were Grapes, Muscat of Alexandria, Madresfield Court, Canon Hall Muscat, and Black Hamburg; two excellent bunches of each being shown in fancy, cross-handled baskets, the Grapes resting on Vine-foliage, and the baskets themselves being relieved with Asparagus sprays. There were also Nectarines Pitmaston Orange and Lord Napier; Peaches Princess of Wales and Royal George; Plums, Kirk's; two excellent Melons; Pears Williams' Bon Chrétien, Apples Lady Sudeley and Worcester Pearmain, and Figs. The table was ornamented by three large trumpet glasses, and a number of smaller ones furnished with Montbretia and Francoea racemosa flowers, relieved by Ferns and Gypsophila. It may be of interest if we append the table showing the number of points gained in respect to the various fruits:—

Apples, points gained	5	Points possible	7
"	4½	"	7
Figs	6½	"	7
Grapes, Black	9	"	10
"	8½	"	10
" White	8½	"	10
"	9	"	10
Melon	7	"	8
"	6	"	8
Nectarines	7	"	8
"	7	"	8
Peaches	7	"	8
"	6	"	8
Pears	6½	"	8
Plums	4½	"	6
Beauty of Flower and Foliage	6½	"	8
Harmonious Blending of			
Colour, points gained	8½	"	10
General Arrangement for			
Effect, points gained	9	"	10
	126		151

The 2nd prize was taken by Sir J. W. PEASE, Bart., Guisborough, Yorks (gr., Mr. J. McIndoe), who gained 113½ points, all but twenty-three of which were awarded for excellence of the fruit shown. 3rd, Lady HENRY SOMERSET, Eastnor Castle, Ledbury (gr., Mr. G. Mullins), who gained 112 points, being very close to the last-named exhibitor. 4th, Lady THEODORA GUEST, Henstridge (gr., Mr. T. Wilkins), who gained 89 points.

GRAPE.

Though there was no "great Grape class" this year, in the sense there was in the previous year, there were plenty of very fine Grapes shown in the classes exclusively for this fruit, as well as in those for collections of fruits. The best collection of six bunches, in three varieties, was shown by the Rev. F. M. BULKELEY OWEN, Tedsmore Hall (gr., Mr. J. Langley). Black Alicante was shown grandly, the bunches being of unusual size, well shouldered, large in berry, and magnificently coloured; Madresfield Court were also of first-rate quality and size; whilst the remaining varieties, Black Hamburg, were finished to a degree. Of the six other competitors, the most successful for 2nd prize were D. & W. BUCHANAN, Forth Vineyard, Kippen, N.B., showing Madresfield Court, Alnwick Seedling, and the new Diamond Jubilee, all of them being good; 3rd, C. E. NEWTON, Esq., Mickelover Manor, Derby (gr., Mr. CAMPBELL). The bunches of Madresfield Court were not of best form, but the berries were noteworthy.

Four Bunches, Two White, Two Black.—Messrs. D. & W. BUCHANAN won 1st prize, showing Madresfield Court and Muscat of Alexandria. Of eight other exhibitors, C. E. NEWTON Esq., won 2nd prize with Black Hamburg and Muscat of Alexandria. The first-named variety was shown the better, but the Muscats contained some berries of great size. 3rd, the Earl of HARRINGTON, with the varieties Muscat of Alexandria and Madresfield Court.

New Grapes.—In a class for two bunches, black or white, of a new Grape raised and introduced during 1895 to 1900 inclusive, Sir J. M. PEASE won 1st prize for the black-fruited variety named Directeur Tisserand; 2nd, Diamond Jubilee from Messrs. D. & W. BUCHANAN.

Three bunches Black Hamburg.—E. A. YOUNG, Esq., Tan-y-Bryn, Bangor (gr., Mr. A. Rudlock), had the best exhibit of this variety with moderate-sized bunches of large, handsomely-coloured berries. Of eight other collections the best was from the Earl of HARRINGTON, and C. E. NEWTON, Esq., was 3rd.

Madresfield Court.—There were nine exhibits of two bunches of this variety, and generally they were very good, but those of Col. PLATH, Llanfairfechan (gr., Mr. W. Coates) (1st prize), were much superior in size to all the others; 2nd, Mrs. WILSON, Market Drayton (gr., Mr. A. Salt), who had berries

superior in size and colour to those in the larger bunches just noticed; 3rd, J. C. WATERHOUSE, Esq., Prestbury, Macclesfield (gr., Mr. A. H. Hall).

Black Alicante.—There were six exhibits of this variety, and Messrs. D. & W. BUCHANAN, had extra large bunches, especially one of them, and 1st prize was accorded to them; 2nd, Rev. T. M. BULKELEY OWEN, who had handsome bunches of regular form; 3rd, Col. PLATH.

Gros Colman and Gros Maroc.—There were twelve exhibits in this class, which was very well contested. 1st, W. G. PHILLIPS, Esq., Berwick House, Shrewsbury (gr., Mr. Geo. Greimier), who had monstrous berries of Gros Maroc, as large as small Plums; 2nd, Rev. T. M. BULKELEY OWEN, with the same variety; and 3rd, the Earl of HARRINGTON, also with Gros Maroc.

White Grapes (Muscats).—There were eight exhibits in the Muscat class, which was not specially strong. The 1st prize was won by Colonel PLATH, who was well in advance of the other competitors; 2nd, Lord BAGOT, Blithfield Gardens, Rugeley (gr., Mr. J. Bannerman); and 3rd, W. NEILL, Esq., Holmes Chapel, Cheshire (County Council). The bunches shown by the last-named exhibitor were of fine size, but lacked finish.

Any other White Grape.—Of four exhibitors, the Earl of LATHOM was 1st, with the variety of Buckland Sweetwater, splendidly coloured, of moderate size; 2nd, J. C. WATERHOUSE, Esq., who had Foster's Seedling; and 3rd, A. M. BARBER, Esq., Wellington (gr., Mr. E. Jones), also with Foster's Seedling.

FOR THE COUNTY OF SALOP ONLY.

Black Hamburg.—The best in this class of ten exhibits was one from Mrs. WILSON; 2nd, Lord TREVOR, Brynmalt, Chirk (gr., Mr. W. Davies); 3rd, the Rev. T. M. BULKELEY OWEN.

The best variety in the "any other black" class was Madresfield Court, from Mrs. WILSON; Alnwick Seedling, shown splendidly by H. H. FRANCE HAYHURST, Esq., Overley, Wellington (gr., Mr. S. Bremmell), was 2nd.

The 1st prize for Muscats was won by Lord HARLECH, Brogyntyn (gr., Mr. T. Lambert); 2nd, Mrs. WILSON. There were five exhibits.

Buckland Sweetwater won 1st prize for Miss WRIGHT, Halston Hall, Oswestry (gr., Mr. C. Roberts), in the class for any other white variety; 2nd, Lord TREVOR, with Foster's Seedling. There were seven exhibits.

OTHER FRUITS.

Peaches were capital, and the best dish of six fruits among twelve exhibits was one of Bellegarde, large, handsome, finely coloured fruits from S. T. BATES, Esq., Whitfield, Hereford (gr., Mr. R. Grindrod); Royal George was 2nd, as shown by E. A. YOUNG, Esq., Tan-y-Bryn, Bangor (gr., Mr. A. Rudlock); and the same variety, 3rd, from J. S. TIMMIS, Esq., Allerton, Liverpool (gr., Mr. B. Cromwell).

Nectarines in dishes of six fruits were shown by nine exhibitors, and the 1st prize was won by the variety Stanwick Elrue, large, fine, rather lightly coloured fruits, from J. C. WATERHOUSE, Esq., Macclesfield (gr., Mr. A. H. Hall); 2nd, the Earl of HARRINGTON, Elvaston, Derby (gr., Mr. J. H. Goodacre), who had Pineapple; and 3rd, the same variety, from J. S. TIMMIS, Esq., Allerton, Liverpool (gr., Mr. B. Cromwell).

Apricots were good, and there were fifteen exhibits of six fruits each. The 1st prize was won by Lord KENYON, Gredington, Whitechurch (gr., Mr. H. Taylor); and the 2nd by G. T. BATES, Esq.; 3rd, J. B. WOOD, Esq., Henley Hall, Ludlow (gr., Mr. H. Hunter).

Melons.—The best green-fleshed Melon was one shown by the Rev. T. M. BULKELEY OWEN, Tedsmore Hall (gr., Mr. J. Langley). Capt. H. L. BUTLER, Shotton Hall (gr., Mr. J. Birch), was 2nd; and a fruit of the variety Earl's Favourites from the Earl of LATHOM, Ormskirk (gr., Mr. B. Ashton), 3rd. The best scarlet-fleshed Melon among thirteen, was apparently a seedling variety from T. A. M. DICKIN, Esq., Wern (gr., Mr. G. Gilbert). Another seedling from the Hon. Mrs. INGRAM, Temple Newsham (gr., Mr. R. Davies), and the 3rd prize was won by Rev. T. M. BULKELEY OWEN.

The best white-fleshed Melon was one from JAS. COCK, Esq., Ridgebourne, and Col. PLATH, Llanfairfechan (gr., Mr. W. Coates), was 2nd with a variety named Hero of Penrhyn. The well known Hero of Lockinge from the Earl of Lathom, was 3rd.

Plums.—The best Gage Plums were shown by the Earl of HARRINGTON, who won 1st prize for twelve fruits, showing the variety Transparent Gage; the same variety won 2nd prize for the Rev. T. M. BULKELEY OWEN; and Green Gage as shown by Sir J. W. PEASE, was 3rd.

In a class for twelve fruits of Plums other than Gage varieties, Oulin's Golden won 1st prize for the Rev. T. M. BULKELEY OWEN, who had very handsome fruits. There were six exhibits.

In a competition for purple-fruited varieties, that of Kirk's, shown admirably by the Earl of HARRINGTON, was awarded the 1st prize; Grand Duke from Sir J. W. PEASE was 2nd; and Prince Engleheart from the Rev. T. M. BULKELEY OWEN, 3rd. There were three other exhibits.

There were only three dishes of red-fruited varieties, and one of the Japanese varieties named Burbank was placed 1st from Sir J. W. PEASE. These fruits were large, handsome, and of most tempting colour.

Cherries, though not shown in large quantities, were excellent in quality. The best dish of fruits was one of the

variety Tradescant's Heart from Sir J. W. PEASE. The 2nd and 3rd prizes were won by J. B. WOOD, Esq., Henley Hall, Ludlow (gr., Mr. H. Hunter), and Lord KENYON.

GROUPS OF PLANTS.

These were, as usual, of first-rate quality, and of most praiseworthy design. They are remarkable instances of studied arrangement of plants, but of a character that can seldom, if ever, be successfully imitated in the private garden or mansion, owing to the time and material which would be required. The largest groups were of miscellaneous plants, in and out of bloom, arranged to produce the best effect, and upon spaces of 300 square feet.

The 1st prize was won by Mr. CYPHER with an exhibit of the type Mr. CYPHER is in the habit of showing. A large rustic bridge spanned the back of the group across its width, and this was surmounted by a graceful Kertia of considerable dimensions, and from the two front corners of the group two smaller bridges of less height proceeded towards the larger one. By means of these, and with slight mounds in various parts of the group, most delightful glade-like effects were reproduced, and a great deal of variety of material, as well as design, included. To enumerate even the principal species used to create this effect would be impossible with the limited time we have at our disposal. The 2nd prize was won by Mr. W. FINCH.

Class 3 was for a group of ornamental foliage plants, Palms, Ferns, &c., upon a space of 300 square feet. Mr. J. CYPHER won 1st prize again here, and as this group backed his exhibit in Class No. 2, the bridge already described had an effect in each. The arrangement too described in the case of the above exhibit was adopted in this case also, but there were no plants in flower. The effect was one of shade and colour, and form in foliage alone, and was not less pretty or interesting. None but the choicest species was used, and everyone of them was presented in grand condition. Miss WRIGHT, Halston Hall, Oswestry (gr., Mr. Roberts), who took 2nd prize in this class, had an exhibit very little differing in arrangement to that of Mr. CYPHER. Mr. W. VAUSE, Leamington Spa, was 3rd in this class; and Mr. W. FINCH, Coventry, was awarded a special prize.

The winner of a smaller group of plants arranged for effect was H. H. FRANCE HAYHURST, Esq., who adopted an arrangement not less ambitious than was seen in the larger groups, and the exhibit attracted considerable admiration from the visitors; 2nd, RICHARD TAYLOR, Esq., Abbey Foregate, Shrewsbury.

SPECIMEN PLANTS.

Twenty Stove and Greenhouse Plants.—This class alone produces at Shrewsbury such an array of magnificent specimen plants as may not be seen in any show in the country. Mr. J. CYPHER, of Cheltenham, who won 1st prize, had extra large, handsome specimens of Codium angustifolium, Isora Duthii, I. Williamsii, Erica Austriana, Allamanda nobilis, Erica Aitoniana, Codium Warreni, Kertia australis, E. Belmoreana, Livistona chinensis, Bougainvillea Cyperii, Codium Queen Victoria, Erica Irbiana, Statice intermedia, Codium Sunset, Bougainvillea glabra, Phenocoma prolifera Barnesii, and Rondeletia speciosa major. These plants were not merely such as would win a 1st prize at many smaller shows, but some of the compact-growing ones were 9 feet across, and the Palms almost 20 feet in height, and perfect in their fronds, whilst the Codiums possessed such colour as is difficult to obtain even on small specimens that can be cultivated very close to the glass. T. S. TIMMIS, Esq., Allerton, Liverpool, was the winner of the 2nd prize, and showed beautiful plants, though of smaller proportions than those from Mr. CYPHER, Coventry, who adopted quite a different arrangement, and had no bridges, but a large central vase-like structure. In many respects this exhibit was worthy great commendation, but had less artistic merit. Mr. W. VAUSE, Leamington Spa, was 3rd.

Thirty Stove and Greenhouse Plants.—The plants shown in this class were required to be in pots not exceeding 10 inches in diameter, and not fewer than twelve of the specimens must be shown in bloom. Lord HARLECH, Brogyntyn, Oswestry (gr., Mr. T. Lambert), was 1st, his flowering plants including Acalypha hispida, Ixoras, Dipladenia, Allamanda, Statice, Clerodendron, and others were capital; nor less in merit were the foliage plants, such as Codiums, Cordylines, Palms, &c. Mr. J. CYPHER, Cheltenham, won 2nd prize; and T. S. TIMMIS, Esq., Allerton, Liverpool (gr., Mr. B. Cromwell), 3rd.

Twelve plants for table decoration.—Several exhibitors competed with plants suitable for this purpose, showing groups of twelve specimens. T. S. TIMMIS, Esq., won 1st prize, showing five Codiums, a Cordyline Jamesii, Aralia Veitchii, Cocos Weddelliana, &c., all of moderate size and well coloured. J. C. WATERHOUSE, Esq., was 2nd.

The best collection of thirty miscellaneous plants in pots not exceeding 5 inches, was shown by Capt. H. L. BUTLER, Shotton House, Shrewsbury (gr., Mr. J. Birch); and W. T. SCOTT, Esq., was 2nd.

The best *Caladiums* in sixes were shown by T. S. TIMMIS, Esq., and they were very fine plants; H. H. FRANCE HAYHURST, Esq., was 2nd.

Pyramidal Fuchsias in pots were shown well by W. T. SCOTT, Esq., who had 1st prize for six specimens; Mr. A. BATEMAN, Abbey Foregate, Shrewsbury, was 2nd.

The last-named exhibitor won a class for six stove and greenhouse plants (County of Salop only); and Mr. G. BURR, Oaklands, Shrewsbury, was 2nd. Lord HARLECH won a similar class.

Six Earli Fuchsias were well shown by Mrs. G. S. SLANEY, Sunnycroft, Wellington (gr., Mr. T. Stevenson).

The *Best and Polyanthous* in the show were exhibited by Mr. ALBERT MYERS, Sutton Lane Nursery, Shrewsbury, who had 1st prize for the best collections of single, and six double-flowered varieties. Mr. A. BATEMAN was 1st in each instance.

W. T. SCOTT, Esq., Bosford House (gr., Mr. J. Carter), won 1st prize for zonal Polyanthous flowering in pots, *Coleus* also in pots; Mr. R. TAYLOR, Foregate, Shrewsbury (gr., Mr. H. CHURCH), for Tuberosus-rooted Begonias; Mr. A. BATEMAN, Abbey Foregate, Shrewsbury, for Fuchsias.

CUT FLOWERS.

Cut flowers are a bright and glorious feature at Shrewsbury, and they were well shown on this occasion. Some of the principal classes are noticed below.

There were £37 offered in three prizes for a group of six bouquets and six baskets of cut flowers in a space of 10 feet by 5 feet, *Orchids* excluded. Messrs. JONES & SONS, Shrewsbury, won 1st prize for an exhibit of very tasteful arrangements; 2nd, Messrs. GUNN & SONS, Olton, Birmingham; and Messrs. JENKINSON & SON, Newcastle, Staffordshire, 3rd.

A number of classes were arranged for bouquets of various descriptions, and the principal prizewinners in these were Messrs. PERKINS & SONS, Coventry; Mr. W. HAYWARD, Kingston-on-Thames; Messrs. POPE & SONS, King's Norton, Birmingham; Mr. W. TRESEDER, Cardiff; Messrs. JENKINSON, Newcastle; and W. L. CHEW, Esq., Market Drayton.

The best collection of Carnations and Picotees arranged upon a table 9 feet by 5 feet, was shown by Messrs. CAMPBELL & SON, High Blantyre, N.B.

Dahlias.—Commencing with the class for a collection of Dahlias of any type, to fill a table space of 50 feet, Messrs. KEYNES, WILLIAMS & CO., Salisbury, were placed 1st, who had Show and Cactus varieties of very fine quality, the former arranged on show boards in the usual manner, the former in bold and striking cones at the back with a mixture of Pompon varieties, &c.; Messrs. CAMPBELL & SON, Blantyre N.B., was 2nd, with generally good varieties, and Messrs. KERR BROS., Dumfries, 3rd.

With a collection of Cactus and Decorative Dahlias, Messrs. KEYNES & CO. were again 1st; the previous award going to them for sheer quality of bloom; Messrs. JONES & SONS, Shrewsbury, 2nd, whose exhibit was arranged with great pretensions to effectiveness, but the quality of the bloom, which the judges kept steadily in view, was much superior to that of Messrs. JONES & SONS, with twenty-four blooms of Show or Fancy varieties.

Mr. S. MORTIMER, Swiss Nursery, Farnham, was placed 1st, with blooms showing considerable refinement; clean, bright and symmetrical; the leading varieties were Frank Pearce, Professor Fawcett, Duke of Fife, Sunbeam, James Vick, Victor, R. T. Rawlings and Arthur Rawlings, as his leading blooms; Mr. W. TRESEDER, nurseryman, Cardiff, was 2nd; and Messrs. H. CLARK & SON, nurseryman, Rodley, Leeds, was 3rd.

With twelve varieties, Mr. E. W. KING-KING was 1st; growers for sale being excluded from this class.

Mr. S. MORTIMER had the best six vases of Cactus Dahlias, having in fine character Stutish, Lucius, Exquisite, Mrs. J. J. Crowe, Britannia, M. J. Tuppenny, &c.; The Dowager Lady WATKINS WYNN, Llangetwyn (Mr. John Davis, gr.); Messrs. CAMPBELL & SON were 3rd. With six vases, nurserymen excluded, Mr. E. W. KING-KING was 1st.

There was no entry for twelve bunches of Pompon Dahlias; and in the class for six varieties, the flowers shown were too large and of poor quality.

Roses.—With twenty-four blooms, Messrs. HARKNESS & SON, nurserymen, Hitchin, were 1st, having nice fresh blooms of Captain Haywood, Mrs. J. Laing, Maréchal Niel, Etienne Levet, Exposition de Brie, Maman Cochet, Comte de Rambaut, Mme. Jos. Metral, Prince Arthur, White Maman Cochet, François Michelon, &c. 2nd, Messrs. PERKINS & SON, Coventry, who had a fine bloom of Danemark with other good illustrations. Messrs. D. & W. CROLL, Dundee, were 3rd.

There were classes for twenty-four blooms, and also for twelve blooms, open for the County of Salop. The Dowager Lady WYNN was 1st, with the larger number; and the Rev. J. T. B. WOLLASTON, 2nd, with twelve varieties.

Cut Begonias.—These were shown by Mr. J. B. BLACKMORE, Tiverton-on-Avon, Bath, who had the best box, showing very fine varieties; and Mr. B. R. DAVIS, Yeovil, was 2nd.

In the class for twelve blooms of double varieties; Mr. J. B. BLACKMORE was 1st, and Mr. B. R. DAVIS, 2nd.

Asters showed the incidence of the season, they are not yet at their best; the finest were those of the Victoria type, but some good blooms of the Peony-flowered type were shown. The best twenty-four came from Messrs. CLARK & SON, Rodley, Leeds.

Hardy Flowers.—Lady WATKINS WYNN, was again 1st, with twelve bunches of Hardy Flowers, staging very fine and effective bunches; and the Bishop of SHREWSBURY, Edgmoor Rectory, 2nd.

With six bunches confined to the County of Salop; Lady W. WYNN was 1st, and Mr. G. BURR, Oakland, was 2nd.

Messrs. HARKNESS & SON showed a grand exhibit of hardy flowers (annuals and shrubs excluded) upon a space 15 feet by 5 feet in a class for nurserymen only. It was a splendid group, in which the choice Phloxes, Lilies, Gaillardias, Pyrethrums, Helianthus, &c., were shown in such bold masses as to secure the best possible effect. Messrs. GIBSON, Leeming Bar, Bedale, showed finely for 2nd prize; and Messrs. KERR BROS., Dumfries, N.B. were 3rd.

With 12 bunches of *Annals*, Messrs. GUNN & SON, nurserymen, Olton, Birmingham, were 1st. They had fine bunches of Shirley Poppies, Gaillardias, Sweet Peas, Scabious, Sweet Sultan in colours, Larkspurs, &c.; and Lady W. WYNN 2nd.

Zonal Polyanthous. These were shown by Messrs. J. B. WOOD and A. MYERS; the trusses, both double and single, being good. The 1st prize in a class for six bunches was won by Mr. J. B. WOOD.

Carnations.—These were shown in three classes: the best twelve bunches of Flakes and Bizarres came from Messrs. CAMPBELL & SON, Blantyre; who were also 1st with twelve Picotees; Messrs. PEMBERTON & SON, Walsall, were 2nd.

With twelve bunches, Selfs, Fancies, and Yellow Grounds, Messrs. CAMPBELL & SON were again 1st, and Mr. W. B. VERNON, Welsh Frankton, 2nd, and Messrs. PEMBERTON & SON 3rd.

Gaillardias.—These made a pretty feature in bunches of six blooms—a feature unusual at flower shows. Messrs. GUNN & SONS were 1st, and Mr. T. B. GROVE 2nd.

Gladioli.—These were shown in the class for eighteen spikes in fine character by Messrs. HARKNESS & SON, who had grand spikes of Soleil Couchant, Madame P. Palmer, Sceptre de Flore, and some very handsome seedlings; Mr. R. MORROW, Leominster, was 2nd. The only exhibitor of twelve spikes was T. A. M. DICKSON, Esq.

Sweet Peas.—These were a leading feature, and a large number of bunches were staged in the various classes. With twelve distinct varieties, T. ALDERSEY, Esq., The Hermitage, Shrewsbury, was 1st, his leading varieties Navy Blue, Prince Edward of York, Silopan, Countess of Powis, Gorgous, Othello, &c. Mr. T. B. GROVE, Sutton Coldfield, was 2nd; he had in fine character Salopian, Bronze King, Oriental, Countess of Powis, Countess of Radnor, Meteor, &c. Mr. M. Leche was a good 3rd.

The Eckford Silver Challenge Cup was offered for thirty-six distinct varieties, and Mr. T. CASE MORRIS, Upton Grange, Chester, was 1st, and Mr. E. W. CADDICK, 2nd. The most popular varieties were shown in good condition.

The best eighteen varieties of Eckford's Sweet Peas went to R. L. KENYON, Esq., Oswestry, he had in fine character Dorothy Tennant, Salopian, Lady G. Hamilton, Gorgeous, Mrs. L. Chamberlain, Lovely, &c. 2nd, Mr. T. ALDERSEY.

Mr. R. SYDENHAM offered special prizes for nine varieties. Mr. R. L. KENYON was again 1st, with Gorgeous, Lovely, Lady M. Currie, Prince Edward of York, Emily Eckford, Lady G. Hamilton, &c. 2nd, Mr. P. BLAIR, The Gardeus, Trentham.

VEGETABLES.

The large tent devoted to these products was well filled, with what may be described generally as capital samples. If Mr. BOWERMAN of Hackwood Park was absent his place was well taken by Mr. F. BECKETT, who was almost invincible in some classes. Taking them in schedule order, the class for nine vegetables, for good prizes given by Messrs. Sutton & Sons, Reading, brought nine competitors.

Mr. Beckett, gr. to Lord ALDENHAM, Aldenham House, Elstree, was 1st with superb Onions, Runner Beans, Duke of Albany Peas, Ideal Potatoes, Solid White Celery, good Leeks, Cauliflowers, Carrots, and Tomatoes. Mr. D. GIBSON, gr. to R. W. HUDSON, Esq., Danesfield, Great Marlow, was 2nd having very fine Onions, Carrots, Runner Beans, Celery, and fine Leeks, Cauliflowers, Tomatoes, Potatoes, &c. Mr. W. POPE, gr. to the Earl of CARNARVON, Highclere Castle, Newbury, was 3rd. Mr. ASHTON, gr. to the Earl of LATHOM, Ormskirk, was 4th. Mr. WILKINS, gr. to Lady GUEST, Henstridge, Dorset, was 5th; and Mr. BASTIN, gr. to A. HENDERSON, Esq., Buscot Park, Berks, was 6th.

Messrs. J. CARTER & CO., High Holborn, gave valuable prizes also for nine vegetables, many of the same competitors entering; in this case eight competed. Mr. Beckett was again 1st, with superio Duke of Albany Peas, Ailsa Craig Onions, Celery, Potatoes, Runner Beans, Tomatoes, Carrots, and Leeks. Mr. GIBSON, gr. to J. B. JOHNSTONE, Esq., Combe Cottage, Kingston, was 2nd, having somewhat similar kinds but included some very good Beet. Mr. WILKINS was 3rd, Mr. ASHTON 4th, Mr. BASTIN 5th, and Mr. W. POPE 6th.

Messrs. WEBB & SONS, Wordsley, had a class for nine vegetables also, offering very liberal prizes. Here Mr. GIBSON, of Marlow, was well 1st with Long Surrey Carrots, Ideal Potatoes, Autocrat Peas, Exhibition Runners, Red Celery, Tomatoes, Cauliflowers, and Onions; Mr. E. BECKETT came 2nd, having similar kinds; Mr. E. POPE was 3rd. Mr. ASHTON 4th, Mr. WILKINS 5th, and Mr. Birch, gr. to Captain H. L. BUTLER, 6th.

That there is much monotony in the report of these competitions there can be no doubt, and it will be seen that the fortune of competitors slightly varies just as they put their best products into this or that class. Whilst the average character of the exhibits was about the same as last year, it is worthy of note that the same judges, with the same basis of pointing, put the 1st prize collection in Messrs. Sutton & Sons' class four points higher last year than this, some vegetables, Cauliflowers notably, not being up to last season's excellence. Nearly all competitors had Tomatoes, Potatoes, Onions, Peas, Runner Beans, Cauliflowers, Celery, and Carrots these constituting the chief in collections of nine kinds. With Messrs. CARTER & CO.'s class (the 1st) this year is two points ahead of the winner of last year.

Messrs. JONES & CO., Shrewsbury, offered prizes for eight vegetables, but Mr. Taylor, gr. to Lord Kenyon, Gredington, and Mr. Davis, gr. to Lord Trevor, Chirk, were 1st and 2nd, and the only competitors.

Mr. E. MURRELL, also of Shrewsbury, had classes for twelve kinds, and six kinds of vegetables. In the larger class, Mr. Bremmell, gr. to H. H. FRANCE HAYHURST, Esq., Overley, Salop, was 1st; and Mr. E. Walker, gr. to Sir W. HONYMAN, Whitchurch, was 2nd. In the smaller class, Mr.

BIRCH was 1st; and Mr. Chaut, gr. to Sir COLLEY SCOTLAND, Chilton Grove, was 2nd.

In an open class for dish of Onions, Mr. E. BECKETT was 1st, with fine Ailsa Craig; Mr. WILKINS coming 2nd; but the latter had much the finest autumn-grown Onions, in huge Tripolis.

A class for four dishes of Potatoes brought good competition. Mr. MORROW, Ormskirk, coming 1st, with fine Duke of York, Sutton's Al, Goldfinder, and Mr. Breeze; Col. KENYON coming 2nd, and Lord KENYON 3rd.

The best single dish was a superb Up-to-Date, from Mr. WALKER.

Mr. ASHTON had the finest dish of Peas in Dicksons Champion; splendid pods. Mr. D. BREEZE had the finest Runner Beans; and Mr. CUMBERBATCH, of Silverdale, the best Dwarf Kidney Beans, in Canadian Wonder.

Mr. W. POPE had a superb dish of Carrots.

In the classes instituted by Mr. HERBERT SYDENHAM, of Birmingham, there was some fine products. Mr. READ had the best two dishes of Potatoes in Windsor Castle and Satisfaction; Mr. LEITH, gr. to Col. MIDDLETON, Ross, had the best Celery; Mr. WALKER, the finest Tomatoes, with beautiful Polegate; Mr. T. WILKINS, charming Turnips, with Model. Mr. LEITH, again the finest Onions, in Ailsa Craig, and also the best Parsnips; while Mr. POPE, came 1st with beautiful Carrots, and also the best Tomatoes. Mr. READ, came first with two dishes of excellent Peas, Autocrat and Gradus; and Mr. LEITH, was 1st once more with runner Beans.

NON-COMPETITIVE EXHIBITS.

Mr. J. McIndoe, gr. to Sir J. M. PEASE, Bt., showed dishes of fruits of five or six varieties of Japanese Plums, General Sigo, Chabot, Hattankio, Satsuma, Burchank, and Wickson. The last-named variety was shown as a tree in a pot, and bore a fine crop of fruits; the fruits of all the varieties were excellent in appearance.

Mr. B. R. DAVIS, Yeovil Nurseries, Somerset, had a group of tuberous-rooted Begonias. Most of them were double-flowered varieties of excellent merit, and interspersed as they were with Adiantum Ferns, the group was greatly attractive. Ariel white, Hercules scarlet, Duchess of Albany yellow; Ida, a peculiar but attractive flower of salmon and mauve colour; E. J. Davis, crimson, &c., were varieties worth special note.

Messrs. W. CLIBRAN & SON, Altrincham Nurseries, Cheshire, made an exhibit of stove and greenhouse plants, in which we noticed a number of nice Codiums, including newer varieties as Mrs. J. F. McLeod, Clibran's Silver, Pride of Oldfield, and Mrs. Clibran; Aralia elegantissima, Ixora Pilgimi, Cordylines, and other decorative flowering plants were well shown, including a commendable strain of Calceola pyramidalis.

Messrs. R. SMITH & CO., Worcester, had a group of plants and cut flowers of a miscellaneous character. Lilliums in pots were conspicuous, especially L. Batemanii. The background consisted of Bamboos, Palms, Codiums, Bouvardias, &c., and nearer the front were large bunches of the choicer hardy flowers; and in pans of water a lot of strong blooms of many varieties of Marliac's Water-Lilies.

Ferns were, as usual, shown admirably by Messrs. W. & J. BIRKENHEAD, Sale, near Manchester, who had something like 350 diverse species and varieties, including stove, greenhouse, and hardy.

Messrs. PRITCHARD & SON, Shrewsbury, had an exhibit of bedding Begonias, B. semperflorens Vernon compacta, covered with blooms; also a group of greenhouse plants and Ferns.

Mr. H. DEVERILL, nurseryman, Banbury, had a very praiseworthy exhibit of hardy flowers in bunches. Choice species were shown.

Mr. J. H. WHITE, nurseryman, Worcester, had a group of cut flowers, including Dahlias, Gladioli, Sweet Peas, Herbaceous Phlox, Gaillardias, &c. Salvia hornium violaceum, with violet-coloured bracts. Also a plant in fruit of a variety of the "Strawberry-Raspberry."

Messrs. JAS. VEITCH & SONS, LTD., Royal Exotic Nurseries, King's Road, Chelsea, showed very extensively, having a group of plants arranged on the grass, in a semicircular recess in the specimen plant tent. The group was arranged to excellent effect, and in it were some splendid Codiums, some of them from three to four feet high, and well clothed with foliage of unusually high colour. C. Mrs. Dorman, Warren, Reid, and Prince of Wales, were conspicuous. Nepenthes mixta, Mastersiana, &c., with abundant pitchers, were raised above the group upon stands. A magnificent plant of Heliconia illustris rubricaulis, others of Dracaena Sanderiana, D. Godseffiana, Caladiums, Greenhouse Rhododendrons in flower, Campanula isophylla Mayi, and a few choice Orchids were also prominent features of the exhibit.

Mr. ALBERT MYERS, Sutton Nurseries, Shrewsbury, had a large exhibit, the specialty of which consisted of zonal Polyanthous, which were shown as cut blooms and plants in pots, and they were of excellent varieties.

Messrs. DICKSONS, LTD., Chester, had the best collection of herbaceous Phloxes in the show in named varieties, and a group of cut flowers of miscellaneous hardy perennial species. The centre of the group included a large basin in which aquatic flowers and some of Marliac's Lilies were tastefully disposed.

Mr. EDWIN MURRELL, Portland Nurseries, Shrewsbury made the largest non-competitive exhibit of cut Roses, showing plants in pots, as well as a large number of cut blooms.

Messrs. WEBB & SON, Wordsley, Stourbridge, made an extensive display of cut flowers, showing varieties of Sweet Peas and China Asters. A pretty feature of the group were fine plants of their Excelsior Gloxinia, including a white-flowered variety of much merit, and others of various

colours. The rest of the exhibit consisted of excellent produce of some of the firm's specialties in vegetables, including varieties of Potatoes, Parsnips, Runner Beans, Carrots, Beet, Onions, &c.

Messrs. JONES & SONS, Shrewsbury, showed Dahlias extensively and Sweet Peas, and made a grand display of each in considerable variety.

Mr. W. L. PATTISON, Cherry Orchard, Shrewsbury, showed cut blooms of Violets.

Mr. HENRY ECKFORD, Wem, Salop, showed a fine lot of Sweet Peas in glasses; there were something like forty varieties, in capital condition. Varieties of Cactus Dahlias were also shown by Mr. ECKFORD.

Messrs. HARRISON & SONS, Leicester, exhibited a large number of cut flowers, including Sweet Peas, China Asters, &c.; also a few choice vegetables.

Messrs. LAING & MATHER, Kelso-on-Tweed, showed a collection of blooms of Carnations.

Mr. J. B. BLACKMORE, Tiverton-on-Avon, Bath, exhibited blooms of tuberous-rooted Begonias.

Mr. JOHN GREEN, Norfolk Nurseries, Dereham, had a grand lot of Dahlia flowers, chiefly of Cactus varieties.

Messrs. HARTLAND & SON, Cork, had flowers of tuberous-rooted Begonias.

Mr. S. MORTIMER, Farnham Nurseries, Surrey, showed a stand of Dahlia flowers.

Mr. JOHN FORBES, Hawick, had flowers of varieties of Carnations, Dahlias, and other hardy species.

Messrs. JARMAN & CO., LTD., Chard, had a few vegetables, Apples, cut flowers, &c.

Messrs. GUNN & SONS, Olton, Birmingham, had a commendable exhibit of cut Roses and herbaceous Phloxes.

Messrs. D. & W. BECHANAN, Forth Vineyards, N.B., exhibited fine Grapes, including their new Diamond Jubilee, also one called Forth Vineyard, with berries like giant Black Maroon; and a new seedling with yellow and pink-coloured berries, and solid hard flesh.

Awards.

LARGE GOLD MEDAL.

To Messrs. JAS. VEITCH & SONS, Chelsea, for new and rare plants.

To Messrs. WEBB & SONS, Stourbridge, for cut flowers, &c.

To Mr. JOHN GREEN, Dereham, for Gloxinias, Dahlias, &c.

To Mr. EDWIN MURRELL, Shrewsbury, for Roses.

GOLD MEDAL.

To Messrs. R. B. DAVIS & SON, Yeovil, for Begonias.

To Mr. R. T. SMITH, Shrewsbury, for group of plants.

To Mr. H. ECKFORD, Wem, for Sweet Peas and Dahlias.

To Messrs. DICKSONS, Chester, for plants and cut flowers.

To Messrs. HARTLAND & SON, Cork, for cut Begonias.

To Mr. BLACKMORE, Tiverton-on-Avon, for Begonias.

To Messrs. JONES & SONS, Shrewsbury, for ahlis and Sweet Peas.

LARGE SILVER MEDAL.

To Mr. W. L. PATTISON, Shrewsbury, for Pansies.

To Messrs. CLIBRAN & SON, Altrincham, Manchester, for group of plants.

To Messrs. PITCHARD & SON, for Begonias.

To Mr. J. H. WHITE, Worcester, for cut flowers.

To Mr. A. MYERS, Shrewsbury, for cut Pelargoniums.

To Mr. J. FORBES, Hawick, for Carnations, &c.

To Mr. S. MORTIMER, Farnham, Surrey, for Dahlias.

SILVER MEDAL.

To Messrs. HARRISON & SONS, Leicester, for Sweet Peas and cut flowers.

To Messrs. LAING & MATHER, for Carnations.

To Messrs. W. & J. BIRKENHEAD, Sale, for Ferns.

To Mr. DEVERILL, Banbury, for herbaceous flowers.

To Messrs. JARMAN & CO., Chard, for cut flowers.

r. S. H. MATHEWS, for Tomatos.

MARKETS.

COVENT GARDEN, AUGUST 23.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day but often several times in one day. Ed.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz. 5 0-7 0	Ferns, small, per 100 4 0-6 0
Arbor-vitæ, var. doz. 6 0-36 0	Ficus elastica, each 1 6-7 6
Aspidistras, p. doz. 13 0-36 0	Foliage plants, var., each 1 0-5 0
specimen, each 5 0-10 6	Lily of Valley, each 1 9-3 0
Cannas, per dozen 18 0	Lycopodiums, doz. 8 0-4 0
Crotons, per doz. 18 0-30 0	Marguerites, per dozen 8 0-12 0
Cyclamen, per doz. 8 0-10 0	Myrtles, per dozen 6 0-9 0
Dracenas, var., per dozen 12 0-30 0	Palm, various, ea. 1 0-15 0
— viridis, per doz. 9 0-18 0	— specimen, each 21 0-63 0
Ericas, var., per doz. 12 0-36 0	Pelargoniums, scarlet, per dozen 8 0-12 0
Eubonymus, various, per dozen 6 0-18 0	— ivyleaf, per doz. 8 0-10 0
Evergreens, var., per dozen 4 0-18 0	Spiraeas, per dozen 6 0-12 0
Ferns, in variety, per dozen 4 0-18 0	

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus "Fern," bunch 2 0 2 6	Maidenhair Fern, per doz. bunches 4 0-8 0
Carnations, per doz. blooms 1 0-2 0	Marguerites, p. doz. bunches 2 0-4 0
Cattleyas, per dozen 9 0-12 0	Mignonne, dozen bunches 4 0-6 0
Enchirya, per dozen 2 0-4 0	Montbretias, bunch 9 6 —
Gardenias, per doz. spikes 1 6 —	Odontoglossums, per dozen 4 0-8 0
Gladiolus, scarlet, per dozen 2 6-5 0	Roses, Red, per doz. 1 0-3 0
— white, per doz. 2 6-4 0	— Tea, white, per dozen 1 0-3 0
Lilium Harrisii, per dozen blooms 4 0-5 0	— Safrano, per dozen 1 0-3 0
Lilium lancifolium album, doz. bims. 1 0-3 0	— Catherine Merm. per dozen 2 0-5 0
Lilium rubrum, doz. 3 0-5 0	Smilax, per bunch 4 0-5 0
Lilium longiflorum, per dozen 4 0-5 0	Tuberose, per doz. blooms 0 4-0 6
Lily of Valley, per doz. bunches 12 0-24 0	

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, English, per bushel 1 6-3 6	Melons, Valencia, cases (24) 5 0-7 6
Suffields 1 6-3 6	Nectarines, per dozen 7 0-9 0
Kewicks 2 0-2 6	Class A. 7 0-9 0
Julien 1 6-2 6	Class B. 2 0-5 0
Quarrendens 3 6-5 0	Oranges, Naples, p. case 8 0-15 0
Various 1 0 —	— S. Australian (150) 12 0 —
Apricots, per dozen 1 9-2 0	Peaches, per doz. Class A. 8 0-12 0
Bananas, bunch 6 0-10 0	Class B. 2 0-5 0
Cobnuts, lb. 0 4-0 5	Pears, Californian, cases 5 0-6 0
Figs (New), per doz. 1 3-2 0	— Williams, French in boxes (48) 2 0-3 0
Filberts, per lb. 0 3-0 5	— in crates, according to count 6 0-16 6
Grapes, Hamburgh, new, per lb. 0 7-1 6	Pines, each 1 6-2 6
— Alicante 0 6-1 3	Plums in sieve 1 0 —
— Colmar 1 4-1 9	— English, various per sieve 1 0-2 0
— Gros Maroc, lb. 1 3-2 6	Green Gages in sieves 3 6-5 0
— Muscats, A., per lb. 2 6-3 0	
— Muscats, B., per lb. 0 9-1 3	
— Belgian, per lb. 0 7-1 0	
— Denta, in barrels 5 0 —	
Lemons, case 27 6-32 6	
Melons, each 1 6-3 0	
— Foreign Rocks. 2 0-3 0	

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Aubergines, per dz. 1 6 —	Mint, new, p. doz. bunches 1 6 —
Artichokes, Globe, per doz. 1 0 —	Mushrooms, house, per lb. 1 6 —
Beans, Scarlet Runners, bush. 1 6-3 0	Onions, picklers per sieve 3 0 —
— Broad, home-grown, per bush. 1 6-2 0	— per bag 4 0-5 0
— English, dwarf, per bushel 3 0-5 0	— Green, dozen 2 0 —
— per sieve 2 6 —	Parsley, 12 bunches per sieve 0 9-1 0
Beetroots, bushel 1 6-2 0	Peas, per bushel 3 0-5 0
Beet, per dozen 0 6 —	— in bags 6 0-7 0
Cabbage, tally 2 0-3 0	Potatoes, per dozen 70 0-80 0
— dozen 6 0-1 0	Radishes, 12 bches. washed, in cwt. bags 3 0 —
Carrots, new, p. dz. 1 0-2 0	Salad, small, punnets, per dozen 1 3 —
— washed, in cwt. bags 3 0 —	Shallots, new, per sieve 2 6 —
Cauliflowers, per dz. 1 0-1 6	Spinach, per sieve 1 0 —
Cress, per dozen punnets 1 6 —	— bushel 1 6-2 0
Cucumbers, doz. 1 0-2 0	Tomatoes, English, new, per 12 lb. 3 6-4 0
Endive, new French, per dozen 1 6-2 0	— Channel Islands, per lb. 0 3 —
Garlic, new, cwt. 18 0 —	— Bordeaux, Feb. crates 4 0 —
Horseradish, English, bundle 1 6 —	Turnips, new, per dozen 2 0-3 0
— foreign, per bundle 1 6-1 4	— in bags 3 0 —
Leeks, per dozen bunches 1 6 —	Vegetable-Marrows, per dozen 1 0 —
Lettuce, English Cabbage, bush. 1 6-2 6	— tally 1 6-3 0
— English Cos, per score 1 0-2 0	Watercress, p. doz. bunches 0 4-0 6

REMARKS.—Some good washed Carrots now coming in at the price quoted. The South Australian Oranges, 150 in a case, are of good size, but not fine in quality, and some are wastey. Apples and Plums are plentiful, and low in price. Scarlet Beans are down in price, and are likely to be lower. Good Peas are a short supply.

POTATOS.

Potatos: Beds, Lincoln and Kents, 70s. to 80s. per ton. John Bath, 32 & 34, Wellington Street, Covent Garden.

FRUIT AND VEGETABLES.

GLASGOW: August 22.—The following are the averages of the prices recorded since our last report:—Gooseberries, £4 to £5 per ton; Cucumbers, 2s. 6d. to 3s. per dozen; Onions, Valencia, 4s. 4s. per case; do., 5s. 5s. 6d. to 6s. 6d. do.; Pears, Angers' Williams, 2s. 3d. to 3s. 3d. per case; ripe, 1s. to 1s. 9d.; Havre, 4s. to 5s.; Belgian, 1s. to 1s. 3d. per small molley; Dutch, 1s. 6d. to 2s. 6d. per small sieve; Apples, English, large, 10s. to 14s. per cwt.; do., medium, 6s. to 8s. do.; do., small, 4s. to 5s. do.; Tomatos, Scotch, 6d. to 9d. per lb.; do., Guernsey, smooth, 4d. to 5d. do.; do., French, 3s. 6d. to 4s. 6d. per crate; Grapes, English, 1s. to 1s. 3d. per lb.; do., Guernsey, 10d. to 1s. per lb.; Denia, 1s. 6d. to 5s. per barrel; do., black, 4s. to 7s. do.; Melons, 24s. 4s. 6d. to 5s. 6d. per case; do., 36s. 9s. 6d. to 10s. 6d. do.; Greengages, French, quarters, 3d. to 4d. per lb.; halves, 2½d. to 3d. do.; Plum

French Gohaths, 3d. to 3½d. per lb.; English Prolifics, 2s. to 11s. per cwt.; Belgian Cherry-Plums, 2s. 6d. to 3s. per box; Dutch, 2s. to 2s. 3d. per half bushel; Hamburg, 1s. 6d. do.; Victoria Plums, 6s. 6d. to 7s. 6d. per half sieve.

LIVERPOOL: August 22.—Wholesale Vegetable Market.

Potatoes, per cwt.: Early Regents, 2s. 9d. to 3s. 6d.; Kidneys, 3s. 6d. to 5s.; Lynn Grey, 2s. 8d. to 3s. 2d.; Turnips, 6d. to 8d. per 12 bunches; Swedes, 2s. to 2s. 6d. per cwt.; Carrots, 6d. to 8d. per 12 bunches; Onions, foreign, 3s. 6d. to 4s. 6d. per cwt.; Parsley, 4d. to 6d. per dozen bunches; Lettuce, 4d. to 8d. per dozen; Cucumbers, 1s. 8d. to 2s. 6d. do.; Cauliflowers, 8d. to 1s. 9d. do.; Cabbages, 4d. to 8d. do.; Celery, 2s. to 2s. 6d. do.; Peas, 3s. 6d. to 4s. per bushel; Beans, 1s. to 1s. 2d. do.; do., Kidney 8d. to 10d. per peck; Scarlet Runners, 8d. to 1s. do. St. John's: Potatoes, 1s. 4d. per peck; Grapes, English, 1s. 6d. to 3s. per lb.; do., foreign, 4d. to 6d. do.; Pines, English, 4s. to 7s. each; Apples, 3d. to 8d. per lb.; Pears, 1s. 6d. to 3s. per dozen; Tomatos, 6d. to 8d. per lb.; Damsons, 2d. to 3d. per lb.; Peas, 1s. to 1s. 6d. per peck; Cucumbers, 3d. to 4d. each; Mushrooms, 6d. to 1s. per lb. Birkenhead: Potatoes, 1s. per peck; Cucumbers, 2d. to 4d. each; Damsons, 2d. to 4d. per lb.; Grapes, English, 1s. 6d. to 3s. per lb.; do., foreign, 8d. do.; Mushrooms, 3d. to 8d. do.; Peaches, 3d. to 4d. each.

SEEDS.

LONDON: August 22.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that the demand for Trifolium continues slow; lower quotations meantime for this article are being received from France. As regards Cloverseeds, all round there is a distinct upward tendency in values. Italian Ryegrass is particularly firm. Samples of new Mustard and Rapeseed are now coming to hand. There is an inquiry for Winter Tares, whilst seed-Rye is scarce and firm. New Thousand-headed Kale attracts attention. Canary-seed continues to get dearer, whilst Hemp-seed remains very firm and scarce. Blue Peas and Haricot Beans are strongly held.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending August 18, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.	1900.	Difference.
Wheat	s. d. 24 7	s. d. 28 10	+ 4 3
Barley	26 11	23 3	- 3 8
Oats	17 4	19 11	+ 2 7



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period August 12 to August 18, 1900. Height above sea-level 24 feet.

1900.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			
		AT 9 A.M.		DAY.	NIGHT.	RAINFALL.	At 1 foot deep.	At 2 feet deep.	At 4 feet deep.
		Dry Bulb.	Wet Bulb.						
AUGUST 12 TO AUGUST 18.									
SUN. 12	W.	66° 7	58° 2	77° 6	51° 8	...	62° 5	60° 7	59° 5
MON. 13	W.S.W.	69° 3	62° 9	82° 2	51° 0	...	64° 3	61° 5	59° 5
TUES. 14	W.N.W.	69° 4	61° 7	80° 6	50° 8	...	65° 5	62° 5	59° 5
WED. 15	E.S.E.	65° 6	59° 2	70° 7	57° 9	...	66° 2	62° 9	59° 5
THU. 16	E.N.E.	67° 6	60° 5	76° 2	57° 2	...	65° 6	63° 2	59° 5
FRI. 17	E.N.E.	62° 3	60° 3	79° 2	60° 0	...	65° 9	63° 2	59° 5
SAT. 18	E.N.E.	71° 9	66° 9	83° 2	57° 3	...	66° 5	63° 6	60° 2
MEANS...		67° 5	61° 4	78° 5	55° 1	...	65° 2	62° 5	59° 7

Remarks.—A week of warm, bright weather, entirely without rain.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending August 18, is furnished from the Meteorological Office:—

"The weather during this period was fine and warm generally, but became somewhat unsettled towards its close, with slight rain in many parts of the kingdom, and a severe thunderstorm locally, with extremely heavy rain in some of the southern suburbs of London.

"The temperature was above the mean, the excess ranging from 2° over the northern counties of England and in the south of Ireland, to 3° or 4° elsewhere. The highest of the maxima were registered during the earlier days of the week, and varied from 86° in England, S.W., and Ireland, N., 85° in England, S., 84° in the Midland Counties, and 83° in Scotland N., to 76° in England, N.E. The lowest of the minima were also recorded during the earlier half of the week, and ranged from 38° in Ireland, N., 39° in England, S.W., 40° in the Midland Counties, and 41° in England, N.W., to 48° in England, S., and to 53° in the Channel Islands.

"The rainfall was much less than the mean in all districts. In the southern suburbs of London, however, the fall during the thunderstorm on Friday afternoon ranged from between 0.40 in. and 1.2 in.

"The bright sunshine greatly exceeded the mean in all parts of the kingdom. The percentage of the possible duration ranged from 85 in England, S.W., 81 in the Channel Islands, and 79 in England, S., to 50 in England, N.E., 43 in Scotland, E., and 37 in Scotland, N.

ANSWERS TO CORRESPONDENTS.

ASPARAGUS SPRENGERI FOR SALE PURPOSES: *S. S.* Prepare a well-drained bed surrounded with a wall or a border, employing sandy loam, peat, and a small quantity of rotten dung at the start. Plant forthwith or in February, and train the shoots or strings up to the roof, never letting them get into a tangle. The distance to which to plant will depend upon the size of the plants, 2 feet will do at the beginning; but if the plants thrive, alternate plants would have to be transplanted elsewhere in a couple of years. If a span-house, there might be beds made on either side, the growths meeting at the apex. The whole of the roof might be covered with growths. Nutrient must be afforded after the second year, either as top-dressings of guano or nitrate of soda, applications of stable-drainage, house-slops, &c. The growths are usually cut when of sufficient length, 1½ to 6 feet or longer; no regard being had to their being furnished with fruit or flowers.

BEGONIA-LEAVES DISFIGURED: *W. W.* Rust, caused by a mite. You might try the effects of fumigation with tobacco, or repeated syringings with soapy-water in which tobacco-water is mixed in the proportion of 1 to 20.

BLACK VARNISH ON HOT-WATER-PIPES: *J. R.* Only roasting the pipes over a fire made in the open air will remove the varnish. The pipes need not remain in the fire long enough to destroy the packing of the joints. Of course, some of the joints must be taken to pieces, so as to be enabled to remove the pipes from the glasshouse.

CORRECTION—CHERRY "NOBLE." In our last issue it was stated that Messrs. Ray & Co. received an Award of Merit from the Royal Horticultural Society; it should have read, a First-class Certificate.—*J. C.* For *Hypericum hircinum* read *H. Androsæmum*.

FUNGUS: *W. H. B.* The curious fungus you were good enough to send is *Geoglossum difforme*, which grows in grassy situations, but is generally not so large as your specimens.

GRAPES: *W. Stanton.* Send again when quite ripe, also shoots and foliage. We will retain postage-stamps till reply goes into our pages.

GRAPES, &c.: *X. Y. Z.* Not caused by weed-killer, but by wholesale shanking, which has affected, in every case, the stalk of the bunch. The appearances point to this having been brought about by over-cropping, intensified perhaps by the unhealthy state of the roots. The *Stephanotis* leaves and young shoots are scorched by the sun, whilst the house was imperfectly ventilated.

HAYSTACK, WEIGHT OF: *C. L.* A cubic foot of Hay should weigh 5 lb. Find the contents of the stack in cubic feet, multiply these by five, and you have the total weight in pounds. The part above the eaves will be about one-half that which it would weigh if it were quadrangular.

IVY-LEAF PELARGONIUM: *Scottish Amateur.* When the bulk of the flowering is past, withhold water by degrees, but not entirely, and in a fortnight lay it on the ground in a partially sunny spot for another period of

a fortnight, then prune away some of the old crowded shoots, and slightly shorten the remaining ones. Re-pot or apply a surfacing of loam two-thirds, and leaf-mould one-third, after teasing out as much of the exhausted soil as may be got out without injury to the roots. The plant may then receive as much water as will wet the ball throughout, and be placed in the warmest part of the greenhouse, or in a sunny window. Being practically an evergreen, it must have sufficient water to wet the soil to the bottom of the pot occasionally, and have ventilation in mild weather, and it must be kept slightly moving all winter—in fact, be treated similarly to the show and fancy *Pelargoniums*, only a little warmer. If in a window-box, the plant should be taken up, have its roots reduced a little, and be potted in a pot that will take them comfortably. Potting and surfacing should be done not later than the last week in September; earlier would be better.

LACK OF DRAUGHT IN GARDEN FURNACE: *In Trouble.* For the burning of fine coke and breeze without their caking on the fire-bars, we think that you would get better results from tubular than saddle boilers. The chimney might be lengthened so as to increase the draught, and water kept in the ashpit in order to prevent clinkers forming readily. These cannot be prevented from forming by any means known to us where there is quick draught. With a tubular boiler there is less need to drive the fires, and, of course, less clinkering to contend with.

LAWN RAKE: *S. B. B.* Finley Lawn Rake Co., Joliet, Illinois, U.S.A.

MARGUERITES: *Scottish Amateur.* Take slips forthwith, placing five or six around the edges of a 3-inch pot in sandy soil, and after affording water, place in a close cold frame or hand-glass. Keep in the cutting-pots till March; then pot singly, and grow on, affording slight shifts when necessary. You can pot up the old plants in the boxes, first drying them off slightly, cutting them into shape and reducing their size. Keep in a cold greenhouse or garden-frame, in the latter case plunging the pots in coal-ashes to the rims. Other questions next week.

MUSHROOMS: *C. F. (Bucks).* Fungi too putrid for determination. There is no ring to the stem. The spores are very small. Not an edible species. The peeling of the skin is not sufficient test of a "Mushroom." There is no "royal road," except to learn to know the species by their botanical characters. *M. G. C.*

NAMES OF FRUITS: *S. S. U., Yorks.* The Plum is *Perdrigon Violet Hâtive*, and the Pear *Summer Crassane*.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*H. M. V.* *Tilia americana*.

—*Trow.* *Escallonia rubra*.—*S. W.* 1, a Lime, *Tilia*; we cannot tell which one from a single leaf; 2, *Tulip-tree*, *Liriodendron tulipiferum*; 3, *Cornus mas variegata*; 4, *Euonymus europæus*, common Spindle.—*Ches.* 1 and 4, *Catalpa bignonioides*; 2, *Viburnum lantana*; 3, *Oriental Poppy*; 5, *Sedum carneum variegatum*; 6, not recognised.

—*T. W.* 1, *Galium verum*; 2, *Erica tetralix*; 3, *Calluna vulgaris*; 4, *Statice Limonium*; 5, *Aster Tripolium*.—*Harold Wood.* *Rhus Cotinus*, *Wig-tree*.—*Max L.* *Asclepias eriocarpa*.—*A. J. K., Taunton.* 1, *Saponaria officinalis flore pleno*; 2, *Alstroemeria pelegria*; 3, *Sidalcea malvæflora alba*; 4, *Scutellaria galericulata*; 5, *Mentha aquatica*.—*J. A. C.* We are rather appalled at the prospect of having to name all the trees in the park, but we will do what we can, consistently with editorial duties, to help you. Your specimens are:—1, *Rhamnus catharticus*, *Buckthorn*; 2, *Euonymus japonicus*.—*A. H.* *Viburnum lantana*.

ORANGE-RUST ON THE ROSE: *L. G. R.* Flowers-of-sulphur dusted over infected foliage whilst the latter is wet from rain or dew, or when wetted with the syringe. No infested Rose-leaves or those of other plants should be left untouched by sulphur, or the rust will live to afflict you another year. The fungus is known to science under several names, but it will suffice if we give it Mr. Worthington G. Smith's name—*Coleosporium pingue*. It exists in three forms on Roses at different seasons, but rarely together at the same time and on the same Rose-bush. The first stage it is sulphury or creamy-yellow; at the

midsummer stage it is brilliant cinnabar-red, the "Orange-fungus" or rust stage; and at last it is black. A full description, with figures of the fungus, appeared in our issue for July 17, 1886, pp. 76 and 77.

PEACHES: *H. C. M.* Peach mildew.

PEAR: *W. H. S.* Not generally grown in this country.

PELARGONIUMS: *Scottish Amateur.* We do not understand what you mean by "boggy," but, generally speaking, zonal and other *Pelargoniums*, which are not winter bloomers, or not wanted in bloom till the spring and summer seasons, should be dried off, more or less, and then be cut back severely; that is, into the well-ripened current season's growth, leaving the snags from 1 to 2 ins. long. The plants may then be laid on their sides on the ground against a wall (west or east), and left there till growth recommences, which will be in two or three weeks afterwards. Then shake them out of most of the old soil, cut off straggling roots, and repot; this time in pots two or three sizes smaller than those they previously occupied. Bedding *Pelargoniums* should be taken up in early October, and after trimming the roots and removing the weaker shoots entirely, they should be firmly potted in small pots, using a rather sandy loam three-quarters, and one-quarter leaf-mould or decayed stable-dung. Keep close till they recover their vigour, then afford air pretty freely in mild weather, and apply water only when the soil is getting very dry. Old plants in large pots may be readily wintered in a cool greenhouse if frost be not allowed to reach them, but small plants do best with a little more warmth. Be sure not to pot these plants, especially the young ones, deeply. It is enough if the base of the plant be 1 inch under the surface.

PICTURESQUE COUNTY: *A. N.* Probably most persons would give the palm to Cornwall as being the most picturesque south-western county. Taking all England, Yorkshire shows the greatest variety in landscape.

SEEDING OF CAMELIAS: *D. T.* With the semi-double and single-flowered *Camellias* seeding is very common. When ripe the pods open, and should then be gathered and the seeds extracted. If sown in October in loamy soil, and kept in a cold pit or greenhouse, they will germinate in the spring. The plants form good stocks for superior varieties, or they may be grown on for flowering, which they do most abundantly, giving a variety of colours, with occasionally a good double-flowered variety among them.

SEEDS FROM THE TRANSVAAL: *W. G.* The red seeds are those of *Abrus precatorius*, used as weights for diamonds at one time. We do not recognise the other seed.

SPAN-HOUSE FOR THE CULTIVATION OF EARLY POTATOS, AND TOMATOS LATER: *Lancaster.* We would advise two more rows of piping to be put in, so that the heat may be kept up to 65° in severe weather. For varieties, grow Potatos—Early Early Ashleaf, and Sharpe's Victor; Tomatos—Frogmore Selected, Golden Jubilee, Hackwood Prolific, Conqueror, and Hathaway's Excelsior. We have not space to teach you how these plants must be cultivated. Get a manual on the subject.

TOMATOS: *S. S.* We should imagine, from the information you afford us, that you are coddling your plants, keeping the air too moist, and affording too little ventilation. To talk of "a chink" of air being given at night, with the roasting day temperatures of the last fortnight, shows that you do not quite understand the needs of the plants, or the danger you run of having disease among them. The flowers do not set properly because the air is not set in motion by ventilation; hence the young fruits drop off. The field Tomato plants that fail to set their flowers may be growing in too rich a soil.

COMMUNICATIONS RECEIVED.—Wills (Ltd.).—*W. S.* Consult a patent agent.—*R. B.*—Sydney Burton.—*W. Watson & Sons.*—*W. Fulford.*—*E. Webb & Sons.*—*G. Johnson.* *L. C.*—*Hilberic Friend.*—*R. Brain.* cannot trace the package.—*K. & S.*—*H. R.*, Plymouth.—*E. C.*—*A. C. F.*—*D. R. W.*—*C. R. F.*—*G. B. M.*—*A. P.*—*A. D.*—*R. P. B.*—*W. S.*—*J. Benbow.*—*D. T. F.*—*W. L. Heaver.*—The requests of our Correspondents, *R. W.*, *W. B.*, and *Blackie & Son, Ltd.*, will receive attention in a few days.

SPECIMENS, PHOTOGRAPHS, &c., RECEIVED WITH THANKS.—*W. T. T. D.*

DIED.—July 29, 1900, aged 79 years, *GEORGE COOKE*, of Stanley Vale, Wylam-on-Tyne.



THE

Gardeners' Chronicle

No. 714.—SATURDAY, SEPT. 1, 1900.

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DAUGHTERS OF THE YEAR.
AUGUST.

THE August garden is the happy hunting-ground of annuals. I likened them last month to an autumnal eruption of Lake visitors eclipsing the permanent residents. We have just verified the comparison by a visit; avoiding, however, the crowded dusty tourist centres, to make our home in a still removed place, as Milton calls it—a valley unvisited and unknown, lying off the common routes. Dotted here and there are venerable cottages and farm-houses, white or grey, embosomed in Damson-orchards. Each has its mighty Yew-tree—I measured one 18 feet in girth—dating from the time when every householder was compelled by law to plant a Yew beside his home, that bow-timber might never be wanting for the cloth-yard arrows of the English archers. The hills on either side ascend 600 feet, clad with Heather, Bracken, Juniper, commanding the entire semi-circle of the Lake Mountains, from Black Comb on the west, to eastward Ingleborough and Pennigant. On the steep banks of the narrow lanes show harmonious masses of yellow, red, and blue—Golden-rod, Betony, Hair-bell; patches of Cow-wheat cover the moist outcroppin' slate; deep in grass are the Bistort and the fleshy Orpine, flanked by spreading

white Wood-sage, Basil, and Devils-bit. Behind them is a background of endless Broom, used once, they tell us, as an ingredient in the manufacture of Kendal-green, its glossy pods of black and purple entwined with blossoming Woodbine, and neighboured by short Raspberry stems still full of fruit; while over these again is the dry unmortared wall, Polypody, Ladyfern, Trichomanes, Wall-rue, waving or peeping from its crevices. Within the farmhouse lodgings are quaint beam-ceiled rooms, with vast chimney-piece and monumental oaken table, the last at meal times covered with native bread, vaccine cream, troutlets from the little brook, farm-fattened poultry. Without, is the primitive wholesome pageantry of scratching hens and chuckling ducks, and gobbling turkeys, and excited sheep-dogs, such as gladdened Mrs. Poyser's eyes, or brought back bodily health and mental balance to poor, storm-tossed Caterina.

We have returned to find the garden dominated, as I said, by annuals. Gayest of all, and covering most ground, is *Coreopsis Drummondii*; other prominent yellows are *Eschscholtzia*, self-sown year by year; and lovely *Bartonia*, with blooms unerringly regular as a botanical diagram. There is a grand patch of *Malope grandiflora*, red and white, the flower which, as she tells us in her *Gardening for Ladies*, made Mrs. Loudon a botanist. Weak-stemmed *Salpiglossis* is interspersed amongst herbaceous plants, which support and exhibit its splendid funnel-shaped blossoms—blue, bronze, lilac, mauve. "Where in doubt, sow *Nasturtium*" (*Tropeolum* the wise it call), has been my life-long garden maxim; their gaudy flowers and clear succulent leaves fill vacated spaces and climb denuded branches. Giant Sunflowers line the garden wall, and gladden the passers by. A battered ecclesiastical-looking urn, whose history I cannot trace, is filled with seedling *Campanulas* and Creeping-Jenny, both finely pendulous over the carved sides and stem. I strive each year in vain to raise the curious *Lathyrus Nissolia*, a blade of grass tipped by a bright red Pea; but I succeed with the not less interesting *L. aphaca*, a yellow-flowered Vetch quite destitute of leaves, which are replaced by broad heart-shaped stipules. My seeds came originally from Worthen, in Shropshire, so far as I know, its one English habitat.

The Carnation-bed is going off as the month ends. I dress it annually with road-scrappings, to which all the sorts take kindly. There are Cloves, Picotees, Marguerites, and many more; but I observe that visitors fasten most delightfully on sulphur-coloured Nora, Ruskin's favourite, brought from the Brantwood garden. The herbaceous border owes much to the Gailardias, supported by many kinds of perennial *Helianthus*, by French Marigolds, *Chrysanthemum atratum*, a profusion of pretty *Galactites tomentosa*, with its grey leaves and pink Thistle-heads, and a bordering of Asters and Petunias. At its shadiest end is a sunken tub, filled with purple Loosestrife, and with *Acorus calamus*, the sweet Thames-rush, into which Alice pulled her boat; behind are stems of the tall, fragrant Balsam, while around it plants of *Acanthus longifolius* send up their long, flowering spikes, and the graceful leaves from which the capitals of Ionian columns are said to have been modelled. In the rock-border are *Montbretia*, *Oenothera caespitosa*, and the lovely little *Anomatheca cruenta*. Of coarse plants, *Rudbeckia* is on the wane; *Saponaria* in full bloom, brought long ago from Barrow on the Bristol Channel, where it is probably a

native; silvery *Hippophae* from the eastern coast is forming its coral berries; Marsh Mallow, rural specific against sores and wounds, lifts its soft foliage and pale pink flowers; *Allicampagne*, *Inula Helenium*, commemorates Helen's tears for slain Paris; early-sown "Scarlet Lightning," *Lychnis chalcedonica*, bids the rash gazer wipe his eye with its unusual dazzling hue. Hollyhocks are at their very best; Dahlias, in our backward climate, hardly yet profuse in bloom.

"No garden is complete without its sun-dial," I wrote in these columns ten years ago. Virgil does not tell us that he found one in the Corycian garden; he may have done so, for they were common in Italy before the Christian era, but there is certainly one in ours (fig. 46, p. 163). For an ancient copper gnomon, perched formerly on a wooden post, I erected a stone pillar, curbing the eccentricities of the sculptor. Its four-square summit carries mottoes and devices; on the sunny side a verse from the Greek Testament, "Coming down from the Father of Lights;" northwards, a line from Virgil, "I will fill up my allotted hours and go back to darkness;" east and west my own device, and my old Winchester school shield and motto. When the hours allotted to myself are ended, I have ordained, like Howard the philanthropist, that it shall be placed above my grave. It stands until then in the middle of the lawn; and beside it, on July and August afternoons, when the stress of the day's work is over, and the tall Sycamores cast welcome shade, the basket-chairs are pitched, and the tea-table spread. Drawing-room and study-windows show through gadding Clematis, white Jessamine, aspiring Virginian Creeper; the line of blue Lobelia along the flower-border edge makes Burne-Jones harmony with the green close-shaven turf; swifts chase one another overhead—alas! they left us on the 24th; the "Lady of the place" presides, her little Maltese dog reposing at her feet; visitors and inmates gather round, the bit of Wordsworth or of Tennyson is read, the garden owns its etymology—a *guarded* place—insured against all but serene thoughts, pleasant looks, friendly converse—

"A garden is a lovesome thing, God wot;
Rose plot,
Fringed pool,
Ferned grot,
The veriest school
Of peace; and yet the fool
Contends that God is not.
Not God! in gardens! when the eve is cool?
Nay, but I have a sign,
I'm sure God walks in mine."

Here you see it, photographed on a sudden impulse one afternoon, and admirably reproduced. Only, remembering that the operator with a camera is out of sight, be not hasty to set down the placid figure, waiting for its tea, as the counterfeit presentment of *Coryciscus senex*.

ORCHID NOTES AND GLEANINGS.

LÆLIA CRISPA.

THIS general favourite is not flowering here this year as well as it usually does; the dampness and the cloudy weather of this season, though permitting many things to grow to perfection, having not had a beneficial, at least, not corresponding influence upon the plant. We have a plant which last year bore 116 flowers upon 19 spikes, which this year is carrying only 37 flowers on 6 spikes. The plant, when growing, loves plenty of moisture,

but it requires plenty of light as well, and not as we are now getting, a deluge of rain lasting a few days, and followed by cloudy weather, and this by bright, glaring, scorching sunshine. The light and shade are subjects requiring much skill in the management of glasshouses, especially in this part of the country; for instance, what would be a (comparatively) dullish day in a town may mean a scalding day in the country, hence the necessity for constant observation. In plants generally, and in Orchids in particular, the building up of a solid, strong growth should be the object of the cultivator, and not rank, sappy growth. The material used about the roots of Cattleyas should be chiefly crocks, a little sphagnum-moss, and the fibre of Orchid-peat. Let the plant be so potted that the air has free access to the centre of the pot, for there is nothing like air at the roots for making lasting plants. There is much time wasted in affording water when it would be but to greater advantage listening to the voice of the plant. Intelligence in affording water is absolutely essential, an idea as to the look of the weather, the amount of fireheat that has been used, the extent of the damping down, in so far as it has an effect in minimising the necessity for the application of water, and lastly, the stage of growth of a plant. For about six weeks after the plant has done flowering it should have a fair supply of water, and afterwards water may be gradually withheld; and unless the pseudo-bulbs begin to shrivel, no more water should be given from the end of the month of October to the beginning of May. At the last-named season the plant will begin to grow, and a handful of lime and soot should be placed here and there within, say, 10 feet of each other on the floor of the house, is a good thing at that season, the volatile ammonia acting as food for the plant. Weak manure-water is very helpful, especially if allowed to run down inside and outside of the pot, for the roots of the plant will rapidly follow the same course. *Lælia crispa* is a roaming plant, and should it require potting, care must be given that the "leads" look towards the centre rather than away from it. The best time for potting, in my opinion, is just before it starts into growth—not in the autumn after it has finished flowering. *H. W. T., Cornwall.*

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

SELECTING THE BUDS.—Among plants cultivated to produce large blooms, many of the Japanese varieties have formed their buds. The selection of the proper bud is a very important matter. When the bud is being formed, there occurs a temporary cessation in the growth of the plant. After a few days have passed, shoots may be seen pushing from the nodes below the newly-formed bud. If such shoots be not promptly removed, the bud will fail to swell, and the growths will take from it all nourishment. It is well to retain for a few days just one of these shoots, choosing that which is nearest the bud. This one may be removed when it has been found that the bud has not been injured by earwigs, thrips, the "jumper," birds, or rough winds. Incases where the bud has been thus injured, the shoot already mentioned will produce a bloom at a later date, though it may not be so good in quality as the injured one would have been.

When the buds have been selected, and the young growths removed, some light support should be affixed to the main shoot, extending to the base of the bud. This will strengthen the peduncle, which in some cases is weak. Small stakes or pieces of builders' lath tied to the shoot itself about 10 inches in length will make them secure.

Earwigs are generally troublesome at this stage of growth; crippling the bud, and making them uneven in growth. They may be trapped by the aid of Bamboo-canes, Broad Bean-stems, or rolls of black cloth, about 10 inches long, and thrust in among the leaves; in these the earwigs will

secrete themselves on the approach of daylight, and may be easily caught and destroyed.

The recent showery weather, accompanied by such irregular temperature, is a prolific source of mildew attack. Flowers of sulphur sprinkled over the affected parts is the best remedy. Any plant showing signs of a loss of colouring matter in the leaves, consequent upon the use of cold, hard water or other cause, should be treated before the plants go inside. Sulphate of iron at the rate of $\frac{1}{2}$ -ounce to 1 gallon of water will quickly cause an increase in growth and colour. If any of the plants are very late in growth or bud-formation, they may be hurried along by affording each a dose of nitrate of soda dissolved in water at the rate of $\frac{1}{2}$ -ounce to 1 gallon. Do not apply this more than once a week, and discontinue it directly a change in growth is perceptible. *E. Mo'ynaux.*

AUTUMN TREATMENT OF OUT-DOOR GRAPES.

FEW other plants want more pruning and attention than a Vine, if it is to ripen its fruit in an average autumn in this country. If September were always a month like the Septembers of 1893 and 1895, Grapes would ripen however they were treated; but we never know what is coming, and therefore it is best to prepare, if not for the worst, at least for only a moderately sunny autumn. The whole object of the treatment of out-door Vines in late summer and early autumn is to let the fruit have all the air and warmth it can get.

If it has not already been done, all the young wood not wanted for next season should be cut off, except, of course, the side shoots which are fruiting. These latter should some time ago have been cut back to one eye above the fruit. On the main rods or branches it is of no use leaving shoots of too great a length for fruiting next year, as it does not ripen properly, and if it does not ripen properly it will produce no good fruit next year, 4 feet being generally enough to leave of the strongest growth. By cutting out all the superfluous wood, more strength is left for the fruit, which, if still stoning, requires a great deal of solid matter from the soil; and if the stoning is finished and the fruit beginning to swell, it wants all the sugary substances which the leaves can elaborate. All weak growths should be cut clean away, and the big leaves left of such a density that the face of the wall may be seen between them. The fruit wants the leaves, especially the big ones, as it is the shining of the sun upon them which gives the fruit its flavour; and at the same time the sun should be able to shine direct upon the wall a little, so as to increase the amount of heat radiated from it, and let the air circulate well about the fruit.

The chief cause of the non-ripening of Grapes in a damp autumn is mildew; and this must be constantly looked out for, and preventive and curative measures taken at the first sign of its presence. If the soil about the root-stem is thickly covered with plants, especially if these are afforded water, the Vine will be predisposed to attacks of mildew. If the space for about 2 feet from the stem is fairly clear of vegetation, the sun is enabled to warm the soil, and this warmth induces early ripening. Fruit on a wet soil is always longer ripening than that on a dry one. When the Grapes are beginning to turn colour, but not before, all the leaves which screen the bunches from the sun's rays should be removed, unless the weather is very hot, in which case the leaves will enable the fruit to swell to a bigger size, and develop a finer flavour.

As a preventive of mildew when the weather seems favourable to an attack, the Vine may be syringed with a solution of liver-of-sulphur. This needs careful using, or it may damage the foliage. If used at the rate of one ounce in ten gallons of water, it is quite harmless to the leaves, but is a good preventative of mildew. Suppose the mildew to have come, one ounce to four gallons of water should be used in cool, damp weather; and not

more than one ounce to twice that amount of water in hot, sunny weather. The evening is the best time for syringing. In all cases, enough soft-soap should be put into the water (soft, if possible) to make a good lather when it is churned up with the syringe. Liver-of-sulphur costs 6*l.* or 8*d.* a pound retail, and it has one disadvantage in certain circumstances—it blackens white-lead paint.

If liver-of-sulphur cannot be obtained, the mildew can be killed by boiling a quarter of a pound of black sulphur (*S. vivum*—a powder) in three pints of water, and dipping the bunches in it when it is just hot enough to hold the fingers in. Of course, this will need heating again with a little added water after a dozen bunches or so have been dipped. This may seem a tedious process, but after a little practice, a hundred bunches can be dipped by a man in a short space of time, especially if a second lot of sulphur is being heated whilst the first is being used. *Alger Petts.*

THE ROSARY.

THE SEASON OF ROSES.

LOOKING back from this intermediate season upon their first fair summer inflorescence, I cannot but think that the achievements of many Roses have been memorable, considering the treatment they received from Nature, who has seldom been more unmerciful with her brightest creations. Especially distinguished by their floral affluence and beauty, under such adverse conditions, have been *Clio* and *Margaret Dickson*, both of these being very attractive Roses, the former having been raised by Mr. Wm. Paul, of Waltham Cross; while the latter is a native of Newtownards, in Ireland, and one of the finest Roses Messrs. Dickson have produced. Both are vigorous varieties, and very floriferous. I cannot say which of those Roses I account the more valuable for garden decoration; it is "a choice of Hercules," like that between Mrs. Sharman Crawford and Mrs. John Laing. *Clio* was grandly exhibited by its raiser Mr. Wm. Paul, at the Temple Show this year; but I subsequently had it equally good in my garden. Its only rivals here during the second week of July were *Clara Watson* and *Margaret Dickson*; of these, the former, introduced (but not raised) by Mr. Prince of Oxford, has proved, during this and all previous seasons, by far the finest of my precious hybrid Teas; though it has been almost rivalled by an exquisitely beautiful Rose of French extraction, entitled *G. Nabonnand*, and included by Mr. Cant of Colchester in the class of pure Teas. Other Tea-scented Roses that have flowered effectively amid much atmospheric tribulation are *Devoniensis*, *Madame Lambard*, strong in growth, and profuse in richly-coloured bloom; *Anna Olivier*, a most reliable and an effective Rose; *Hon. Edith Gifford*, which suffered much occasionally from untimely floods of rain; *Souvenir d'un Ami*, saved from ruin not seldom by its pendulous habit; *Homer*, *Jules Finger*, *Bouquet d'Or*, and *Belle Lyonnaise*. Greater sufferers than these from bad weather were the varieties *Madame Hoste*, *Medea*, a superb, fine-weather, lemon-coloured Tea; Mrs. James Wilson, still more easily soiled; the charmingly-tinted *Luciole*, *L'Idéal*, *The Bride*, *Madame de Watteville* (the "Butterfly Tea"), and *Souvenir de S. A. Prince*. *Lamarque* and *Niphetos* had quite enough of adverse weather during their usual flowering season, and certainly achieved nothing in the special direction of floral effect. *La France*, *Augustine Guinoisseau*, *White Lady*, the lovely *Aurora*, and other precious hybrid Teas were much more fortunate in their first atmospheric experiences; their opening was heralded by brilliant sunshine, which, *mirabile dictu!* (as Virgil would have said), lasted for three days. It was the great Russian, Count Smolortk, who commenced a dissertation to Mr. Pickwick by saying that

politics is a subject "which surprises in itself." As much may be said, with much more intelligibility, of Rose cultivation in a season such as this. It is indeed surprising that so many splendid Roses as those whose calmly-suffering natures I have eulogised, have bloomed and looked so well. Vigorous in constitution and strong in petal, they seemed to withstand with marvellous composure the fury of her blasts, which, like Lord Roberts, as depicted by Mr. Rudyard Kipling, were "a terror for their size." Rather should I say, that those pitiless "rains from Heaven" upon the Roses were terrific in their influence, in virtue of their length. A few hours of such floods as this season we have experienced, and realise still, seriously disturb the beautiful aspect and composure of the gracious garden queen; but when Nature weeps piteously for days at a time, her influence is disastrous to the spirit of the Rose. Then chiefly do we remember those words of George Herbert:—

"Sweet Rose, whose hue, angry and brave,
Bids the rash gazer wipe his eye;
Thy foot is ever in the grave,
And thou must die."

—David R. Williamson.

of these means of reproduction, as in the case of the Tulip and similarly constituted plants. If the grower of a bulbous plant should wish to produce a variety, he elects to reproduce by seed, and he attempts so to control the production of seed by artificial pollination, or cross-fertilisation, as to bring about the desired end. On the other hand, if the object of the grower be to multiply the plant without variation, he elects, in the case of a plant like the Tulip, to cultivate it for its bulbs. The production of seed and the production of bulbs the same season in a plant like the Tulip are not compatible with each other, for the reason that the powers of Nature would thereby be overtaxed. We learn therefore from this practical application of vegetable physiology that in the case of all bulbous plants it will tend the more certainly to the production of healthy and vigorous bulbs if the flowers as soon as they have reached their floral maturity be cut instead of being left to grow and exhaust the energies of the plant by "running to seed."

The Canna, many beautiful variations of which in recent years have been introduced, is subjected to the same rule. If we would have flowers we

In Bermuda very great success has attended the cultivation of the Japanese Lily introduced now many years ago. The so-called Bermudian Lily is really of foreign origin, but in its cultivation in Bermuda the practice involved in the maxim of "Cut flowers and have flowers" is thoroughly understood and most strictly carried out. The flowers are cut at the season of most perfect flowering just a day or two earlier than the period of perfect bloom, and they are shipped to New York, where they find a ready market. The plants deprived of their flowers still have their leafy stems to provide nutrition for the bulbs, which in due season are harvested.

Mr. Harris, in the Report on the Hill Garden at Resource (1899), gives some account of an attempt to cultivate the Bermudian Lily in Jamaica. He writes:—"The bulbs of the Bermuda Lily were lifted in July and August last, gradually dried, and sent to Hope to be packed and despatched to their owners. They were not a success from a commercial point of view—that is, the bulbs did not increase in size and quantity as it was hoped they would do; but horticulturally they were everything that could possibly be desired. With just ordinary field cultivation they were in flower, more or less, all the year round, and from March to June the field was simply a sheet of magnificent blooms."

There is no mention here of any marketing of the cut-flowers, and obviously that was not attempted. But may not the want of success, "from a commercial point of view," have existed in this very fact? It would be interesting to have the trial of cultivating Japanese Lilies in Jamaica repeated under conditions more closely similar to those which obtain in Bermuda. In order to procure bulbs of good quality and profitable in size and quantity, the flowers must be cut (and disposed of profitably, if practicable), and then the energies of the plants, no longer expended on maturing the flower and its seed, will be given to enlarging and multiplying the bulbs. In this way the grower may be successful commercially as well as horticulturally, by acting on the lines of the maxim "Cut flowers and have flowers."—James Neish, M.D., Old Harbour, May, 1900, in the "Journal of the Jamaica Agricultural Society."

SELECTION.*

BY HENRY L'EVEQUE VILMORIN.

THE word *selection*, taken in its general sense, means *choice*. In natural history, when applied to plants or animals, which man raises under domestication, it assumes a more restricted meaning, and is applied only to the choice of individuals considered as agents of reproduction. It is in this sense alone that the word *selection* is used in this article.

The purpose in this paper is to indicate the reasons for making a certain choice, the results it may produce, the precautions that should accompany it, the practical methods of applying it, and the difficulties that may be met and may defeat the purposes in view.

Evidently the process is quite different from natural selection. The latter proceeds independently of man by the simple interplay of natural forces, while artificial selection is an act performed by man for the purpose of satisfying his needs and tastes. Nature modifies plants in *their* interest; man modifies them in *his*; but in the one case, as in the other, there is an acquirement of characters and a transmission of the characters acquired.

This article is not the proper place to discuss selection and its relation to evolution, of which the creation of varieties by selection is only one phase; nor is it the place to discuss the relative permanence of existing species. The task of the improver of cultivated plants is not to create new species, but to establish and fix in known species well defined and constant races possessing distinct characters which may render them useful or agreeable to man.

The practice of selection is almost or quite as old as the practice of cultivation itself. It is certain that from the most remote beginnings of pastoral life, primitive man has preferred the finest and best-shaped animals for breeding purposes. In the same way, when the culture of certain useful plants had succeeded to a more primitive form of pastoral agriculture, or had become associated with it, the domesticated races of plants were gradually ameliorated by the diligence of some men who were more observant and interested than others; and the improved races were disseminated from place to place.

* *Experiment Station Record*, Washington, D.C., U.S.A.



FIG. 46.—THE SUNDIAL IN THE GARDEN OF "CORYCIUS SENEX." (SEE P. 161.)

"CUT FLOWERS AND HAVE FLOWERS."

THIS pithy maxim in horticultural practice is believed to have originated in England soon after the famous Dutch Tulip-mania, and is said to have had its forerunner in "Cut Tulips and have Tulips." The essential value of the maxim lies in the fact that it embodies a principle in physiological botany which deserves to be well understood by all cultivators of flowers. As applied originally to Tulips, it is capable of a simple explanation. The Tulip is a plant which possesses two modes of reproduction—one mode by means of its bulb, the other by means of seed. The easiest and most natural method in the case of the Tulip and other bulbous plants is by means of seed. It would seem, however, that Nature's efforts, vigorous as they are throughout the whole vegetable kingdom in the reproduction of species, are restricted to one of these modes of multiplication in the case of bulbous plants, and that man has it in his power to select one or other

must cut them, and not allow the plant to run to seed. In this case the Canna perpetuates itself by means of its rhizome or root-stock, which is an elongated fleshy part of the stem lying underground, and upon which buds or "eyes" are developed to serve for the new shoots of the succeeding season. When the plant is allowed to produce seeds, the development of the rhizome does not proceed with any vigour; but when the flowers are cut in time to prevent exhaustion of the energies of the plant by the production of seed, then the development of the rhizome goes on satisfactorily, and the grower may count with reasonable certainty on having flowers on new stems the succeeding season.

With Roses the same maxim may be carried into practice. Cut Roses, and have Roses. Here, in the case of the Rose-bush, the cutting of the flowers on reaching perfection prevents exhaustion of the plant by the formation of seed. It thus keeps up the tendency of flower-buds to form, and a Rose-tree thus treated will present a prolonged period of bloom, and the flowers, in addition, will be finer than under a less attentive treatment.

THE EFFECTS OF CULTIVATION ON PLANTS.

Much has been said of cultivation as a means of improving plants. The writer believes, however, that the selection of the individual intended to reproduce a sort has done infinitely more in this direction than cultivation, properly so called. Without doubt, the larger amounts of plant-food, air, and room that are provided for the plant under careful cultivation, as compared with wild conditions, are the means by which some given plants attain to a greater individual development; but cultivation in general advances improvement principally because it gives to man an opportunity to observe the plant closely, to notice even the slightest variations in the characters of the different individuals, to note at the time of their occurrence all the variations which appear useful to him, and to fix them by sowing the seed from all the individuals that have shown these variations.

Superabundance of food-supply undoubtedly favours the appearance in cultivated plants of variations which consist of multiplication of parts of a plant or the excessive development of certain parts among them, but heredity interferes to fix those characters, so that they are seen to persist in individuals escaped from cultivation and are perpetuated for a long time, even after the causes that brought them into existence have ceased to act.

SELECTION IN THE EARLIER AGES.

We possess few records bearing on the history of the improvement by selection of the various useful or ornamental plants in ancient times; yet the figures which have been left to us in paintings, mosaics, and sculptures indicate a notable improvement of the species cultivated by the Egyptians, the ancient Greeks, and the Romans, over the wild types of the same plants found in those regions at the present day. The Leeks of Egypt, to the fame of which the sacred writings bear witness, are represented on the bas-reliefs and paintings of Egyptian tombs as of a size far superior to that of the wild Leeks of the mountains of central Asia, which, without doubt, represent the primitive type of the species. The Romans cultivated several varieties of *Brassica oleracea* that represented an immense advance over the wild type found on the coast regions of Europe. The flowers and fruits, figures of which are found frequently in Roman works of art, resemble more the varieties of the present day than the primitive types from which they were developed.

In passing it may be remarked, in reference to those fruits and flowers that are propagated by grafts and not by seeds, that selection is not entirely unconcerned in their culture, but even in such cases is found to exert its influence in several ways. A new variety generally originates from a seed which may have been accidentally planted, the resulting plant being reproduced and multiplied by grafting, or from seed planted by man, the various young plants being carefully observed from day to day, and compared with each other; and meritorious novelties, if such appear, selected and propagated. In grafting, two things must be taken into consideration: In the first place, only those stocks should be used that are healthy, vigorous, as free as possible from defects and diseases, and well provided with roots; and in the second place, the grafts should be taken from the youngest and healthiest shoots of the plant that is to be propagated, and always from those that represent most faithfully the characters it is desired to reproduce. Sometimes variations are produced in plants by dimorphism, as by variation in the form or colour of the foliage, or in the shape or hue of the flowers, as often occurs in the *Chrysanthemum*. There is then opportunity for the selection of the modified branch which is propagated by cuttings or any other method. The question of the permanence or running out of varieties of fruit trees, which is so often and so contradictorily discussed in the horticultural press of all countries, is intimately connected with this question of selection. There is no reason why a given type should run out, if only proper stocks and healthy grafts are used in propagation; but the variety will certainly disappear if it is attacked by parasites to the extent that it is no longer possible to find a graft that does not carry with it its enemy.

To return to the history of selection of cultivated vegetables and flowers propagated by seeds. Italy, Provence, Flanders, and the neighbourhood of Paris were, at about the beginning of modern times, the principal centres of the improvement of common plants. Seeds grown in these places bore a high reputation throughout Europe, and the popularity that they enjoyed shows that the characteristics developed in the various varieties of plants by these skillful and careful gardeners were well fixed, else they could not have reproduced themselves faithfully when cultivated under very different conditions of soil and climate. Vegetable gardeners have been for the most part the creators of European varieties of vegetables (and at the same time of many varieties of flowers, for the two occupations of vegetable gardener and florist were very often followed by the same individual, as is frequently the case at the present day); and the uniformity, the constancy, and the cooking qualities of the varieties of vegetables originating in Naples, Milan, Lyons, Paris, and the Low Countries, bore witness to the skill, fine observation, and judgment, in the application of selection which our predecessors possessed.

It is only since the latter half of the seventeenth century that the seed business has begun to be separated little by little from that of general gardening; and as division of labour always results in an improved product, the establishments that have devoted themselves exclusively to the growing of seed have come to do it better and more economically than the common gardeners, whose time and effort were divided among various lines of production. In one respect, however, the competition of the market gardeners as well as

that of the florists, properly so called, is still very useful to the careful seedsman in that it helps to keep him always in the front line of progress. To a less extent than the market gardener and florist, the seedsman is brought in immediate contact with the consumer whose needs are the source of progress and new acquisitions. The former sometimes supply these needs, but often they turn to the seedsman and point out to him the prospect of increased profits as the reward for the creation of new and desirable varieties.

At the present day species that have been cultivated for many years have become, so to say, like wax in the hands of special growers, who mould them and fashion them to their taste, obtaining the various modifications of shape, size, flavour, &c., demanded by the preferences of their patrons and the caprices of fashion.

EXAMPLES OF SELECTION.

It would be difficult to select a more striking example of the variations that selection can develop and fix than the cultivated forms of *Brassica oleracea*. As already stated, this plant is a native of the coasts of Western Europe, and is found on the shores of the Mediterranean, as well as on those of the Atlantic Ocean. The wild plant grows principally on the calcareous cliffs on the border of the sea. It is a semi-herbaceous, semi-ligneous vegetable, flowering from the second year onward, much branched, and making each year both flowering branches and vegetative branches which are to flower the year following. The leaves are thick and fleshy, as are the flowering branches, while the stem and the crown of the root are also to a certain extent swollen and thickened. All of these characters will be found exaggerated greatly in the cultivated varieties of *B. oleracea*, but not all of them in any one race. Ordinarily, one of the organs of the plant is selected with a view to obtaining one of the twenty or thirty forms of vegetables which, identical or nearly so with the others in their essential characteristics of flower and fruit, present most divergent forms so far as the organs of vegetation are concerned.

Cabbages, which form the most important group of cultivated *B. oleracea*, represent the plant reduced to its most simple form—that is, to a single erect stem bearing at its upper extremity numerous large, thickened leaves, more or less closely crowded together, which, according to their shape and the manner in which they are laid over each other, form heads that are oval (as in York Sugar Loaf), conical (Early Etampes, Pomeranian), spherical (Joanet, Holland Short Stem), or flattened (St. Denis, Brunswick). The same forms are found again in the Savoys, which differ from the ordinary Cabbages in the form of development of the parenchyma between the little nerves of the leaves, giving the upper surface a blistered appearance; oval (Long Headed Savoy), conical (St. Jean Savoy), spherical (Victoria Savoy), and flattened (Roblet Savoy).

Again, the same variety of forms is found among the red Cabbages, where the entire leaf is coloured a deep red; conical (Red Conical), spherical (Red Dwarf Erfurt), flattened (Red Pologne).

All these forms without exception are the result of a patient and prolonged selection which has given to them almost complete permanence.

But these are not the only modifications of this plant, or even of the leaves alone. There are the various headless Cabbages or Kale, which differ widely in respect to size, shape, and colour. One of them, the Collard (Rosette Colewort), has round, spoon-shaped leaves, imbricated but not crowded together to such an extent as to deprive those in the middle of air and light and thus blanch them, as is the case with the inner leaves of the head Cabbage. There are numerous varieties of Kales with the leaves green or red, entire or lacinate, flat or curled; Portugal Cabbage, cow Cabbage, branched Kales (*B. oleracea ramosa*), Palm borecole, and many besides, among which Brussels Sprouts is not the least strange. On a simple, straight stem are ranged petiolate, flattened, spoon-shaped leaves. At the axil of each leaf is developed a little branch, the leaves of which fold over each other and are closely imbricated, forming a little hard head. Selection has solved the problem, apparently so difficult, of inducing the formation of heads on the branches of a stem without such formation at its top.

The stem of *B. oleracea*, as I have said, is in the wild type very large, and capable of becoming thickened. Taking advantage of this tendency, selection has established a form, the entire stem of which becomes large and fleshy, and yields a product that can be used as a vegetable when it is young and tender, and is valuable as a food for cattle in winter when it has reached its full development.

If, instead of affecting the entire stem, the swelling is localised a little distance above the ground, the Kohl-rabi is formed, the varieties of which are numerous, large or small, early or late, white or violet.

The capability of becoming thickened and fleshy is not limited to the stem. The tap-root possesses it also, and plants which showed a marked tendency to vary in this way having been noticed and reproduced, have yielded, under the influence of long-continued selection, the turnip-rooted Cabbage, *B. caulorapa* and *ruta-baga*, the former of which has white flesh, the latter yellow. They are round, oblong, or flattened, and may weigh as much as 8 or 10 lbs. Selection has produced these numerous forms from a root that weighs scarcely 1 or 2 oz. in the wild state.

A still more remarkable modification was developed, as follows: The floral branch of *B. oleracea* is very thick and, especially at the early period of its growth, very tender and agreeable to the taste when cooked. Certain Italian gardeners noticed that the inflorescences of certain individuals had the sprouts larger and more thickened than others. Collecting

the seed from these, and selecting among the descendants of the second generation those plants which yielded the largest and shortest floral shoots, they have succeeded in creating the very characteristic modification known as the Cauliflower. Here the pedicels of the flower have become very much thickened and flattened at the expense of the flowers themselves, which on the principal shoots have become atrophied, and appear in small numbers only on the shoots of the third or fourth rank, which develop slowly on those heads which have not been cut at the time when they were good to eat. With the principal results once obtained, selection has produced varieties of Cauliflower, early or late, of varying size, white, yellow, rose, or violet in colour, and of various degrees of hardness.

Here, then, is a plant the different races of which have come down in culture under such different forms that an unusual keenness of insight, or the aid of botanical science, is necessary, to explain that they truly belong to one wild type in which, in one case the leaves, in another the inflorescences, in still another the stem or the root, have been literally modified by the power of selection to such an extent that from infinitely slight variations at the beginning the differences between the various races have become greater than are often found in Nature between different species of the same genus; and all of this has been accomplished by almost imperceptible steps under the influence of continued selection in a single direction.

Doubtless selection may be defined, but nothing can explain it so well as its results. For this reason I shall mention a few more examples taken from among the most common plants.

Take, for instance, Celery. This is an aquatic perennial plant, native in almost the entire basin of the Mediterranean, having its stem and petioles relatively large, tender, hollow, and of a pronounced aromatic odour. It was early observed in ditches and swamps, and introduced into cultivation. In the time of the Romans it was planted in gardens, more perhaps as an ornamental plant for use in domestic religious ceremonies, than as a vegetable properly so called. When it came to be appreciated as a plant for the kitchen garden, it became an object of the gardener's attention. At first the size of the petioles was increased, then the plants with hollow petioles were eliminated as inferior to those in which the entire stalk was filled with tender, crisp flesh. Plants throwing up suckers were weeded out because growth-force is always more economically utilised when it concentrates about a single plant axis, than when it is divided among several. The useful part of the Celery being the stalk or petiole of the leaf, efforts were and are still directed toward the development of this organ by reducing others to the smallest size compatible with the good growth of the plant. The variety Pascal is very near to the present ideal of a green Celery. The self-blanching Celery was found in the neighbourhood of Paris perhaps a dozen years ago by a very successful market-gardener, Chemin. The original plant yielded seed from which was raised a good proportion of the new variety, but also some green plants. By persistent selection the proportion of green plants has been considerably reduced, but they have not yet entirely disappeared. By way of compensation, this race has yielded a pretty variation with rose-coloured ribs, which is becoming fixed. White Plume and Boston Market are two good American varieties. The latter throws up many suckers, which is considered a defect according to European standards. But attention has not always been concentrated upon the petioles of the Celery. Connoisseurs have not failed to observe that the fleshy roots on which the leaves are inserted possessed an especial flavour and were sweeter, although not of as clear a colour as the stalks. By selection certain plants have been obtained in which the root has been modified into a large, well-shaped, and very regular, rounded enlargement, as in the Erfurt and Prague Turnip-rooted Celeries.

It should be noted in comparing the various races of *B. oleracea* that but one organ is enlarged. If this organ is the root, the leaves and the petioles are proportionately diminished in size, and serve only as auxiliary organs to the root. It is very difficult in general to develop two organs at the same time to any great degree in the same plant. In support of this assertion the Beet may be mentioned, as the history of its cultural evolution presents many analogies to that of the Celery. I shall devote only enough time to it to point out certain differences between these two vegetables. In the first place, in the case of the Beet it is the kind of root developed that is of greatest importance. In this case the leaves are only the organs of assimilation, and of transformation of the food absorbed. The form having the leaves, or rather the petioles and ribs of the leaves very much enlarged and the root small, branched, and fibrous, is known as the Swiss chard. Whenever there occurs an enlargement of the stalk or petioles properly so called, one may be certain that a decrease in the size of the root has already occurred or will occur immediately.

The deep red colour of garden Beets is of very great importance. But in sugar Beets, the absence of colour—that is, the perfect whiteness of the flesh of the root—is a condition of perfection. Selection has produced this very remarkable specialisation. There is no necessary or absolute correlation between the colour of the root and that of the foliage. In garden Beets a thick, tender, sweet, and richly-coloured flesh is much desired. Now, a variety may have these qualities without its foliage showing, at least for the greater part of the growing period, any particularly deep coloration. In England it was the fashion to produce varieties of garden Beets with large and deeply-coloured foliage (as in Dell's Dark Leaf Beet). Some men of independence and good judgment have

not hesitated to say that this is putting colour to a bad use; that it is better to concentrate it in the root. As a matter of fact, the dark red Egyptian and Cheltenham Green Beets, and among the American varieties Edmund Early Turnip, are living proofs that a variety may have finely-coloured roots, and at the same time preserve in its leaves a noticeable proportion of green surface. A third class might be made of

Take, for instance, the Amaranth; this is an annual plant from India of rapid growth, with large, alternate, oval leaves, and inconspicuous flowers in large bracteate clustered spikes. It has become, under the influence of selection, in one case a vegetable esteemed for its large and thickened leaves; in another case an ornamental, valued also for its leaves, which in this instance are variously coloured and

stem at its top must be measured by dissecting all the reduplications which form the part of the plant called the comb. This coloured velvety mass, so ornamental in its bizarre effects, is the simple modification of an ordinary straight cylindrical stem into the comb.

From the same original type has been produced another entirely different plant. This is the feathered Celosia, which is as graceful and light as the other is massive and stocky. Whereas all the stems were united into one in the cockscomb, they are here distinct, erect, and divided into ascending branches, each one of which ends in a plume having a varying number of filaments furnished with bright-coloured, silky bracts, and vary from golden-yellow, through flame colour and crimson to deep violet. In spite of such great differences in appearance between the two plants, it is not possible to observe the botanical characters and fail to recognise that both are modifications of the same original species.

From the same root are produced still other formations in which the ornamental part is not the inflorescence but the leaf, which is zoned or flagellated or bordered, sometimes with brown on a green ground-work, or sometimes with bright red on yellow or brown, or even simply on a brighter shade of red. All these pretty variations are the result of selection acting on the various forms found in Nature, or on modifications induced and patiently accentuated by man.

If it were not for the danger of making the list too long, many other examples of profound modifications brought about by the action of selection on the natural characters of wild plants could be mentioned. A single example that has been produced entirely within recent times will be instanced. The Canna was introduced into garden culture about 1820 as a foliage plant; seeds were sown to obtain variations of form and colour of foliage, and the success of M. Année in this respect is well known. More recently M. Crozy, of Lyons, and other growers, have directed their efforts to increasing the size of the flowers, as a result of which we have the large-flowered varieties that to-day rival the Gladiolus for garden decoration in summer. At the same time the colour of the flowers has increased in brilliancy. It may be said indeed that hybridisation has not been entirely unconcerned in this increase of size, but it is none the less selection that has taken advantage of the tendency thus introduced into the plant as a result of crossing, and that produces for us each year better varieties, the series of which is still far from being exhausted.

(To be continued.)

GYMNOPSIS UNISERIALIS.

THIS is an annual received from Herr Dammann, of San Giovanni à Teduccio, near Naples. He describes it as a native of Texas, and as resembling in its habit *Helianthus cucumerifolius*. It grows about 30 inches high. Above the dark green foliage rise most abundantly, on rather long stems, the very pretty chrome-yellow flowers, which are from 2 to 3 inches in diameter (fig. 47). They are most valuable for cutting, as they keep well in water for a long time. The plant produces flowers without interruption from June to September. It seems to be more generally known under its synonym of *Gymnolomia*, under which name it is described and figured by M. Mottet in his excellent French edition of Nicholson's *Dictionary of Gardening*. It has also another synonym of *Heliomeris*. I consider it quite an ornamental plant, though unfortunately miffy, and apt to damp off when in a young state. W. E. Gumbleton.

NURSERY NOTES.

SEED GROWING AT EYNSFORD.

THOSE persons who have visited our large seed farms, such as that of Messrs. H. Cannell & Sons, soon realise that we have not to depend quite so largely as is sometimes thought for our seeds upon what is grown for us out of Great Britain. Not that it is either wise or needful that seed growing, or horticulture in any of its aspects, should be looked on in any insular spirit, as our beloved art ought to know neither nation nor race; nevertheless we are pleased when we see in our own land that the raising of seeds of many species of plants is an industry which is prospering, and showing that despite its variability, the British climate is not without advantages in the production of good seeds. Certainly there may be wisdom or unwisdom in the selection of suitable spots for this kind of enterprise, yet we find it is generally successful in all parts of the kingdom; and the Eynsford locality seems to be specially fitted for the work of seed production. It is extensive,



FIG. 47.—GYMNOPSIS UNISERIALIS, AND DETAILS OF THE FLOWER.
COLOUR OF FLOWERS CHROME-YELLOW.

those having very deeply-coloured, reddish-brown foliage, which are used for decorative purposes only, as, for instance, the *Dracena Beet*. But in agreement with the rule already laid down, this race has a small root of no culinary value.

I cannot conclude this list of plants which have been modified by artificial selection in such divergent directions, and which so plainly bear the impress of man's activity, without mentioning a few ornamental plants as well as garden vegetables.

variegated; and in a third case it is valued for its inflorescence, which is so curiously modified that one would hardly recognise at first sight the original type in the strange variations that have been developed from it.

Let us consider only the extremes, the Cockscomb and the feathered Celosia. The former is a low-growing, stocky plant, with its flowering head enormously developed. An accidental fasciation of the stem has been fixed by selection, and augmented to such an incredible degree that the size of the

for there are some 300 acres under cultivation. There are lofty hill sides, and a deep, broad fertile valley. There is the fullest exposure to sun and wind, there is variety of soil, and there is a somewhat southerly position that affords the maximum of light. This extensive area is not all devoted to seed culture, for some of it is made to produce ordinary farm crops interchangeable with seed crops. Some portions are of permanent nursery character, and fruits, Roses, shrubs, trees, herbaceous plants, and myriads of similar things are well and freely grown. But there is constant variation and exchange going on, so that crops of diverse nature are regularly notated. The firm devotes itself entirely to garden seeds, or, as Mr. Cannell so quaintly terms them, "golden" seeds, meaning thereby that Kentish-raised seeds ultimately produce golden crops, and profits. One of the difficulties in describing a seed-farm such as that at Eynsford is in mentioning all of the diverse crops found thereon.

ASTERS.

Probably, just at present, none attracts more attention than the Asters of the annual section, for these are in apparently immense quantities and variety. Talk about too many Asters! Why there seems to be some 150 or 200 or so diverse varieties of these favourite annuals, and in harvesting every diverse form, apart from the most careful rogueing whilst in bloom—and seed growers are terribly severe on everything in their stocks that is not of good character—everything has to be saved separately with the utmost care. It is one of the unquestioned characteristics of Asters that they do not seem to be influenced by insect visitation, as varieties that are grown side by side do not seem to vary in the east; yet natural fertilisation seems to be perfect. Those who saw the remarkable collection of cut blooms recently staged by the firm at the Drill Hall were enabled to gather from it something of the variety grown, as also to judge of the fine quality of the double flowers. Yet, with the exception of a few German novelties, all were produced by plants grown from home-saved seed, and of similar productions for several previous years; indeed, Mr. H. Cannell, who so ably presides over the seed-growing department, asserts that their Kentish culture and constant keen supervision in rogueing, causes constant improvement in the flowers. What gigantic flowers, almost like white Japanese Chrysanthemums, are the Emperor and Comet. Then there are Victorias, Mignons, Pæony-flowered, Chrysanthemum, tall and dwarf, Bouquet, Quilled, and many others, each one represented by some six to twelve colours. Certainly, of Asters alone, it is possible to have during July and August a garden of marvellous beauty. Summer and intermediate stocks are chiefly grown in pots under glass, where they are found to give the most satisfactory seed.

Pblox Drummondii astonishes not only by the variety of habit found, but by the variety of its colouring. There are free-growing forms, such as we have long been familiar with, some dozen or more of colours and markings. There are star-shaped varieties, the flowers of which rank amongst the quaintest grown in gardens. There are "compactum" forms that present in habit and effect the embodiment of beauty for bedding plants, the colours generally of the flowers being fitly termed glorious.

By way of antidote to all this brilliancy of colour come the big patches of Mignonette in numerous varieties also; and how profusely do they seem to seed on these Kentish hills! There are Giant whites and reds, the latter chiefly of the pyramidal form; golden hued, and others all neutral tinted, yet so sweet-smelling! It is a poor garden indeed that has not its bed of Mignonette.

Verbenas, once propagated by cuttings only, are here flowering in great profuseness, not only mixed for those who like them so, but also in separate colours. What beautiful varieties of these summer flowers may now be had through seed production,

such as in times passed gardeners would have desired to possess and propagate. The Verbena is now of such fine form, so varied and beautiful, that it is but needful to purchase a packet and sow the seed in the spring to have from the plants truly charming effects. Not only *Nemesia strumosa* Suttoni, but also a fine, nearly white-flowered, compact form, does well here too. The latter bears resemblance to *Lobelia compacta*, the plants being literally balls of flowers, about 6 inches in height.

Then how wonderfully good are the Balsams. It is quite a joy to see these plants so commonly relegated to pots, and drawn too, doing so finely outdoors here. There are plants 10 inches in height, literally masses of flowers; and there is the old strain in many colours 18 inches high, and all producing superb double blooms. Then, by way of change, comes a big breadth of noble Hollyhocks; and yet farther off is seen a breadth of the double Jacobæ in great variety of colouring. How is it that these long-blooming plants with such beautiful colours are not used for summer bedding? Now is passed the remnant of a large breadth of hybrid Columbines, of which the firm have such a charming strain. Few hardy plants excel these Aquilegias for beauty or quaintness when in full bloom. From these, new colours and combinations still come yearly from seed.

Double orange and lemon Marigolds are very fine; large breadths of them show now but very few singles, the strains are so good, and in form of flower so perfect. The French Striped, in diverse forms, and pretty singles, are also in great abundance. The strong winds that have recently prevailed seem to have swept over the several large breadths and to have left them unharmed, for they are flowering gloriously. What wonderful blooms some strains have, how wonderfully floriferous are the smaller-flowered ones. The pretty white Snowball, of compact habit, is a remarkable fine bedder.

Godetias, Clarkias, Gaillardias, Calliopsis, and myriads of other good hardy annuals, and all in great variety are found here, and it is wonderful how in the harvesting they are kept so true. Amongst these the beautiful variety of *Chrysanthemum annuus* and tricolor call for special notice, they are so dwarf, yet so charming. Probably many of those who have gardens know nothing of these good annuals. Dianthus in their wondrous variety are better known, and these give fine masses. Sweet Peas are a remarkable feature, even the much-abused Cupid section are blooming profusely, whilst of the tall varieties in separate clumps entire rows are carrying a second crop of bloom. There are 100 varieties of these grown in this way.

VEGETABLES.

These productions form a very interesting and important feature. Not only are there great breadths of ordinary spring sowings of Onions made, but a few thousands of winter-sown plants are yearly put out to furnish giant bulbs, and there should be in the autumn a very fine stock of these. Mr. Robert Cannell holds that seed from such bulbs gives the finest stocks, and no doubt that is true, for general experience sustains the opinion. There are now growing in this way splendid examples of Ailsa Craig, Improved Wroxtton, Improved Reading, Cocoa Nut, Cranston's Excelsior, Webb's Masterpiece, Sutton's Al, and others; and one of great promise, sent for trial from Portugal by Baron Tait.

Of Cabbage, the firm is particularly proud of its fine stock of Defiance. This is a very handsome, solid, conical green Cabbage, not large, and as seen here, presenting absolutely perfect exhibition heads. Some 10 acres are devoted to culinary Peas, and all are staked. These have done well on a lofty hill-side, open to the sun, a position that seems to have suited them admirably. There seem to be scores of the most popular varieties. Broad Beans, Runner Beans of the best strains, Dwarf Kidney

Beans, are all found in profusion; and of Potatoes, there are breadths, including apparently every well-known variety. The stocks seem to be in excellent, clean condition, and they have ample room allowed them. Disease does not seem to harm the tubers in the pure air of this exposed position. Beets form important articles in seed production. There are the best of the Turnip-rooted ones, and of the tapering-rooted, Pragnell's Exhibition, Dall's Crimson, Sutton's Dark-red, Cheltenham Green-top, &c. Parsnips, too, are grown for seed; and of Carrots, there are to suit all tastes, Early Scarlet Horn, Early Nantes, Intermediate, Long Sarrey, and Altringham, the best stocks for garden culture. Tomatos for seed stocks are grown in long span-houses, and the varieties are numerous. All seem to be good, and they fruit well in the abundant light, being quite free from any form of fungoid pest. Cucumbers are grown for seed in similar houses.

In one house adjoining were some 400 plants in 8-inch pots of *Maréchal Niel* Rose, now with growths from the bud 10 feet long; in another, a big quantity of Vines in pots were rapidly maturing their wood. But to tell all one can see in a day's march over the Eynsford farm and seed-grounds would need far more of space than I may occupy to do justice to all. A. D.

CHERRY NAMES AND SYNONYMS.

THE illustration on p. 127 of the issue of the *Gardeners' Chronicle* for August 18, faithfully represents the fine late Cherry Noble, exhibited at the Royal Horticultural Society's meeting on July 31. I carefully examined the fruits shown, and the award made was a well merited recognition of the good qualities of the variety.

Many Cherries have been introduced from the continent at different times, some of which have almost disappeared from gardens now, owing either to their having proved tender, or through defective cultivation they have lost the good reputation they once had. It is therefore necessary to examine any reputed novelties carefully, to determine if they are new only in name. From a practical point of view, perhaps, it matters little whether a variety is an old one rescued from obscurity or a new one, provided it possess some substantial recommendations for a grower, and it has not been previously recognised by the Society. But to avoid confusion, and the dissatisfaction arising from the multiplication of names, it is very necessary that both exhibitors and committees should take every care in the matter of nomenclature. For this reason, an exhibitor of any novelty should be required to give all the particulars he possesses respecting the history or origin of the variety, or of the plant from which the specimens are obtained. In the absence of information bearing upon these points, a committee might be well justified in withholding an award. Special circumstances as to soil and cultivation will occasionally alter temporarily the characters of fruits in a remarkable manner, of which I have had many proofs.

Amongst Cherries there has been great confusion in nomenclature, some instances of which were given in your columns on p. 106 (August 11). Reference is there made to Turkey Heart, and it is evident that two totally different varieties have passed under this name. Mr. Rivers speaks of Turkey Black Heart as "a popular Cherry in Kent;" and Mr. Bunyard gives "Black Cluster (Turkey Heart or Carrone)." By the last name is evidently meant Corone, which has been variously rendered Couronne, Caroon, Coroun, and Kerroon. This is an old variety, and is described in *Forsyth's Fruit Trees* (4th edition, 1806) as "an excellent fruit, and great bearer." In *Lindley's Guide to the Orchard*, 1831, it is also described with the synonyms "Hertfordshire Cherry," and is the "Merisier à gros fruit noir," of Duhamel, which takes it back to the middle of the eighteenth century. Corone was adopted in the *London Horticultural Society's*

Catalogue of Fruits of 1842, a valuable list, which was mainly due to the efforts of Mr. Robert Thompson. It is rather peculiar, however, that under *Corone* in this list the synonym "*Herefordshire Black*" was inserted, and this was followed in three editions of Dr. Hogg's *Fruit Manual*; but in the 4th edition which appeared in 1875, Lindley's "*Hertfordshire*" synonym was substituted, and a most interesting note is appended to the description. The *Hertfordshire Cherry* is well known to me, and I have no doubt that this and the one catalogued by some firms, and known in a few districts as *Turkey Heart* or *Turkey Black Heart*, are identical with *Corone*, which has priority in its favour. How and when *Turkey Heart* was first applied to this Cherry, I have failed to discover.

The other *Turkey Heart*, or *Turkey Bigarreau* is

distinct from *Noble*, but the third one mentioned, i.e., *Tradescant's Heart*, does resemble that variety in several characters. It is some years since I saw the true variety, and then I had the assurance of the late Dr. Hogg himself that it was correct; as a matter of fact I do not think it is in general cultivation now, for all my efforts to secure true samples of the fruits in recent years have failed. It is only catalogued by one firm known to me, and these two other names are given as synonyms, one at least of which applies to a totally different Cherry. How the name *St. Margarets* was bestowed upon *Tradescant's Heart* I do not know.

The first authoritative mention of the name I can find occurs in the *Royal Horticultural Society's List of Fruits*, published in 1861, but no descriptions are given; and in the same list *Tradescant's*



FIG. 48.—*THALICTRUM CHELIDONI*: FLOWERS VIOLET-COLOURED.

Given an Award of Merit by the Floral Committee of the Royal Horticultural Society on August 14.

quite distinct, and is correctly referred by Dr. Hogg to *Bigarreau*, in which decision he followed Lindley and Thomson. *Graffion* is also an old name for this Cherry, and it is that given by Forsyth; though in an additional list of names that author also mentions *Turkey Heart*, but without any description, so that probably it was insufficiently known to him. This is the case with some other varieties, for *Ronald's Large Black Heart* (*Black Circassian*) and *Fraser's Black Tartarian*, are named as distinct, though we now know them to be identical with *Black Tartarian*. *André Leroy* describes the *Bigarreau* above mentioned as *Bigarreau Blanc* (*Gros*), and gives a formidable list of synonyms which differ to some extent from those by British authorities. He considers it one of the three *Bigarraux* mentioned by *Merlet* in 1667, i.e., "*le Blanc, le Rouge, et le Cœur*."

It is obvious that both the varieties already referred to, namely, *Corone* and *Bigarreau*, are

Heart is also included, as though they were distinct varieties. In the following year, however, the second edition of the *Fruit Manual* appeared, and there *St. Margarets* is classed as a mere synonym of *Tradescant's Heart*, a position it has always been assigned since. The variety has been a favourite in America, where it has been known as the *Elkhorn*; and *Downing* mentions one character that is especially worth notice, namely, "When the trees are young and thrifty the fruit is often of the largest size, fully as large as that of the *Black Tartarian*." The same author also gives an outline figure of the fruit. It should be mentioned that *Tradescant's* is an old variety, as it appears in *Forsyth's* work, though not in *Lindley's Guide to the Orchard*.

The variety known as *Black Heart* is included in the majority of trade collections, and some selections are better than others, but *Kerr's Black Heart* I have not seen. *Lewis Castle, Ridgmont, Beds.*

THALICTRUM CHELIDONI.

THIS, as shown by *Lady Breadalbane*, *Taymouth Castle*, at a recent meeting of the *Royal Horticultural Society*, is a pretty, dwarf, herbaceous species, with ternately divided leaves, and rounded crenate lobes, pale green above, glaucous beneath. It is a native of the temperate regions of the Himalaya at from 6,000 to 10,000 feet. *Hooker* and *Thomson*, in the *Flora Indica*, i., 14, describe it as exceedingly variable in foliage, but as bearing panicle, violet flowers (fig. 48).

NOTES ABOUT SOME FINE CONIFERS.

ABIES GRANDIS.—By far the finest specimens of *Abies grandis* I have seen are growing near *Roxburgh Castle*, the *Earl of Charlemont's* property in the North of Ireland. They are each about 80 feet high, branched to the ground, and thickly covered with the healthiest of foliage. Cones are produced in fair abundance, but, like those at *Penrhyn Castle*, and figured in the *Gardeners' Chronicle* many years ago, only towards the extreme tops of the trees. There are many other beautiful Conifers on the same estate.

On *Coney Island*, in *Lough Neagh*, also owned by the *Earl of Charlemont*, Conifers thrive amazingly; and worthy of particular notice are two specimens of *Cephalotaxus pedunculata fastigiata*, and one of *Thuopsis dolabrata*, the latter bearing immense quantities of full-sized cones. An *Irish Yew* here also claims notice from its unusual size—about 30 feet high, and with a branch-spread of 24 feet—and wealth of dark green foliage.

The *Churchill estate*, in county *Armagh*, contains a very choice collection of the rarer coniferous trees, principally growing on reclaimed peat-bog, and planted by my father about fifty years ago. Worthy of particular notice is the specimen of *Abies nobilis*, from which some of the first cones produced in this country were obtained, and which were sold at a guinea each. It is of giant proportions, measuring in circumference of stem at 3 feet and 5 feet from the ground level 8 feet 3 inches and 7 feet 7 inches, with a height of nearly 80 feet, and a branch-spread of 40 feet. So abundantly are cones produced, that the upper portion of the tree for 12 feet in length appears one solid mass of fruit, and on several of the branch tips I counted eighteen of the large and beautifully formed cones. Strange to say, pollen cones are borne plentifully on the lower branches, which sweep the green sward. *Cupressus Goveniana* is here represented by the finest tree in this country, it being about 45 feet high, and spreading evenly for 48 feet. Cones are freely produced, both male and female, and the lovely bluish tint of the foliage renders it one of the prettiest of *Cypresses*.

Arthrotaxis selagenoides also thrives well, it being 15 feet high, very slender of branch, and coning sparsely. But certainly the most remarkable conifer here is an immense specimen of *Cephalotaxus Fortunei*, measuring nearly 30 feet in height, and the branches spreading to 28 feet, while the trunk is 2 feet in girth. The stiff prickly foliage has a very healthy appearance, the sharp pointed leaves being more difficult to handle than I have ever noticed before in any of these Chinese Yews; the tree is growing in a damp and shady situation. *Podocarpus chilina*, when seen as at *Churchill*, is worthy of culture; which might also be said of *Fitzroya patagonica*, with its fine, whipcord-like branchlets, and rather inconspicuous cones.

Pinus Jeffreyi and *P. ponderosa* grow well in reclaimed peat-bog, as indeed do most of the *Pine* family, the rate of growth being rapid, and the foliage tint brighter than in almost any other class of soil. Amongst the *Junipers*, the most remarkable, certainly the rarest, are *J. drupacea*, which forms a handsome specimen nearly 30 feet high; and the weeping *Indian Juniper*, *J. recurva*, which seems at home everywhere on the *Churchill* property. *Abies magnifica* and *Picea lasiocarpa* have

thriven well, while *A. grandis* and *A. Nordmanniana* are to be seen 70 feet in height, and clothed with branches almost to the ground level.

I am sorry to say that the Larch-disease has found its way to Ireland, and caused great damage in many of the woodlands of Ulster. It is of quite as virulent a type as any that I have seen in England or Scotland. *A. D. Webster.*

PLANT NOTES.

CAMPANULA SULPHUREA, Boiss.

THIS very attractive plant, of which I received seed from Syria last winter, has just begun to bloom here. The flowers, which are of about the same size as the common Hairbell, are of the palest straw-yellow on the outside, and of the richest sulphur-yellow on the inside. The whole effect is most delicate and charming. It is, I believe, only of annual duration, and is native to the sandy shores of Palestine. *A. K. Bulley, Neston, Cheshire.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By *A. WARD*, Gardener to *F. A. BEVAN, Esq.*, Trent Park, New Barnet.

Preparation for Planting.—Where the quantity of land to be planted is extensive, its preparation should be undertaken at an early period of the autumn, either digging the entire area, or taking out the required number of holes for the trees and bushes. The advantage of preparing early is that the soil that is thrown out gets mellowed before planting is performed, and the work can go on without delay. In digging the holes, the upper layer, which is the most fertile, should be put by itself for covering the roots. The holes should be made not less than 4 feet in diameter, and in the case of standard trees it is labour well spent to make them of 6 feet. Having thrown out the first and second spits, break up the soil at the bottom with a mattock. If it be convenient, a stake to which the tree could be at once tied loosely, should be driven into the soil in the middle of the hole. Having ascertained the number of holes required, select the trees and bushes, by going to the nursery for the purpose, which is much more satisfactory than ordering them by post.

Root-pruning and transplanting.—If a large number of trees are to be root-pruned or transplanted, the work may be commenced towards the end of the present month, root-pruning being the first taken in hand. This method of inducing fruitfulness in young trees which are too large to be readily transplanted, should only be carried out on one half of the roots in one year. Root-pruning consists of opening out a trench 4 to 6 feet distant from the stem, according to the size of the crown, the soil being then dug out carefully with a fork and thrown on one side. The trench should be 3 spits deep, and this depth should be maintained throughout, and the bottom of the hole kept clear of soil. The main roots, as they are met with, should be shortened with a knife, and all mutilated ones removed. As the roots are dug out, cover them with wet mats or litter, and keep them thus till they are relaid, which may be at various levels from 2 feet to 6 inches below the surface. The soil should be made firm about them. In lifting a tree, it is not taken bodily out of the soil, for such thoroughness is not necessary, but a number of the roots should be raised at their extremities, and a good ball of soil left intact in the centre of the root-mass. Should the existence of a tap-root be suspected, a tunnel should be cut under the ball, and the root or roots severed. The width of trench required should be 2 feet at the commencement of the job, and distant from the stem 4 to 6 feet. All roots met with should be carefully treated as in root-pruning, pegging them back out of the way when dug out. When no more fibrous roots are found, the ball should be dug away till it is 3 to 4 feet in diameter. Having cleared the roots and thrown the soil out of the trench, carefully cut back all badly wounded and broken roots, and pare smoothly

the ends of large ones that may have been cut through. This done, the roots may be relaid in the manner described for root-pruning. Before winter sets in, a mulch of long stable litter should be afforded all trees which have been in any way disturbed at the roots. Fruit-trees of all kinds on walls and in the open quarter, if making exuberant growth, may be successfully dealt with in the manner I have described. With regard to Figs, they should have but a limited root run, therefore after lifting or root-pruning is done, the border should be enclosed with a wall of slates or of dry bricks, or the trench filled in with mortar rubble. [In the case of a tree that is transplanted because it is exhausted, unhealthy, or stunted from lack of nutriment, the proceedings are much the same as for lifting, excepting that the staple should be replaced with sound turfy-loam, and in the case of stone fruit, lime-rubbish and bones should be added. *Ed.*]

THE ORCHID HOUSES.

By *W. H. YOUNG*, Orchid Grower to *Sir FREDERICK WIGAN, Bart.*, Clare Lawn, East Sheen, S.W.

Odontoglossums.—The species *O. crispum*, and those allied to it, viz., *O. Andersonianum*, *O. Ruckerianum*, *O. Wilckeanum*, *O. Pescatorei*, *O. luteo-purpureum*, *O. Halli*, *O. Coradinei*, *O. tri-pudians*, and *O. triumphans*, should be repotted if that operation be necessary, or if not, then re-surfaced only during the next few weeks. No Orchid has become in recent years so popular as *O. crispum*, and many are the methods of cultivation pursued, but it must be admitted, in many instances, with rather discouraging results. When it is understood that local conditions have an important bearing on their welfare, this lack of success on the part of some orchidists is not so surprising as it may seem to the casual observer. Where the underlying strata of a district consists of gravel or sand, or other porous stratum, the air is rendered too dry for the plants, and there is thus a serious hindrance to their successful cultivation. On the contrary, a chalky or rocky formation appears to afford a desirable amount of humidity in the air, and in such conditions *O. crispum* is not difficult to manage. It is sometimes assumed that because a house consists chiefly of wood and glass it must suit these plants; the aspect of the house, means of ventilation, and other matters, receive but little thought until failures occur. A house that is built against a high north wall is, in my opinion, about the worst possible, seeing that in winter, when sunlight is slight and of short duration, but little direct light reaches the plants. Span-roofed houses built out in the open, with ample means of affording air, are the best for Orchids, as shade can be afforded when and where it is most needed. In all houses built for the growing of Orchids, the direction of their length should be north and south, so that the plants may enjoy an equal share of the sun's light. If a house built of this form has an efficient system of ventilation, ample heating apparatus, and open-work stages placed over others suitably constructed for holding materials absorbent of moisture, the Orchid-cultivator has a fair scope, providing, as has been said the locality is a suitable one. Different kinds of materials and various methods of potting have been tried with varying degrees of success. The condition most favourable in the results is to give ample drainage to the pots, pans, and a compost consisting of peat and sphagnum-moss in equal proportions. There is, however, a drawback to the use of so much drainage material, viz., that it is too cold and damp during the winter months, and entirely unsuited to the needs of the roots forming at that season. Most cultivators of Orchids will have noticed that although the roots trend downward, but few penetrate the drainage, their points on touching the crocks refusing to develop, and become stunted and of a brown tint. In order to remedy this evil, some cultivators employ, instead of crocks, the rhizomes of bracken found in the peat, chopping these into small pieces. This has proved to be a move on the right lines, for the roots fill the entire pot, giving size and strength to the pseudo-bulbs and leaves. The method has its disadvantages, seeing that it is difficult for the cultivator to determine the moment when water is required; moreover, the bracken, if it be not well dried before being used, is apt to become infested by a species of fungus. Who has not admired the *Odontoglossums* cultivated by the Belgians, and envied their success?

Why we in this country have not done equally well, is I think, due to our conservative ways, for several of our most successful growers who have adopted the Belgian method do not regret it. The continental orchidists fill the pots entirely with leaf-mould, with the exception of a crock or two at the bottom, and a surfacing of chopped sphagnum-moss. Lack of all experience of the method prevents me giving details, but I would strongly recommend its adoption by cultivators here. Water, of course, is not needed so often as under our methods, or decay of the materials would soon occur. The air in the *Odontoglossum*-house should be cool, buoyant, and moist, conditions that are produced by affording ample ventilation, judicious damping-down, and applying water to the plants. For some time after being disturbed, the plant should not be afforded water direct, but the surface of the materials should be sprayed lightly for several weeks in fine weather, which will supply as much moisture as the plants really need.

THE KITCHEN GARDEN.

By *A. CHAPMAN*, Gardener to *Captain HOLFORD*, Westonbirt, Tetbury, Gloucestershire.

Winter Greens.—Great differences of opinion exist as to the advisability of moulding-up these crops, and it is difficult to give advice in any particular instance, in the absence of definite knowledge of the nature of the soil to be dealt with. The operation of moulding may be best done immediately after rain has fallen, and in light soils it will be beneficial because the mould will keep the stems in an upright position, and the plants will not be likely to suffer from drought. The increased bulk of soil will also afford protection from severe frosts at a later date, and for this reason I should advise the moulding-up of Broccoli in most gardens. Continue to use the hoe freely between all growing crops. Unless the weeds are entirely removed from the soil they will continue to grow during showery weather, and any which may have run to seed should be pulled up by hand.

Forcing.—The weather during September is generally of a most uncertain character. Sometimes a frost or two will occur in the middle of the month, to be followed by a spell of genial weather till nearly the end of October. Scarlet Runners are generally amongst the first to suffer, and the necessity for forcing is soon felt. Make a sowing, therefore, at once of the dwarf varieties in pots or frames, and by sowing every three weeks, a supply may be had throughout the winter months. In order to do this, it is necessary to have some pits heated by hot-water, or a good-sized Cucumber or Melon-house. If pots be used, those of 7 inches in width will be found best; make them three parts full, with fibrous-loam two-thirds, and decayed manure one-third, together with a sprinkling of $\frac{1}{2}$ -inch bones. After making this compost thoroughly firm, place four or five seeds in each pot, and cover them lightly with some fine soil. For the present, and till the end of October, the pots may be kept in a cool pit, which should be closed during the night and when raining heavily, but giving all the air and light possible on favourable occasions. Where pits can be used, add a quantity of prepared soil to that already in them, and make it firm. Do not overcrowd the plants; withhold artificial heat until it is absolutely necessary, but the temperature should not fall much below 60°. All Beans require an abundance of water, and a temperature of 70° during the winter months. Earliest-of-All is an excellent variety for these sowings, and produces pods seven or eight weeks from time of sowing, being closely followed in this respect by Sion House.

Vegetable-Marrows.—If any backward plants which have been more liberally treated than others are now growing too much to leaf, the feeding had better be discontinued, and the plants afforded soft water. When trouble has been taken to push forward such plants, it is disappointing to have them damaged by frost; but if iron hoops be placed over the beds and mats placed over them at night, the supply of fruits may be prolonged till the end of October.

Turnips.—If the seeds that were sown about the middle of July have germinated freely, the plants may be thinned to about 6 or 7 inches apart. The last sowing should not be made later than the first week in September, and the surface of the soil must be then well sprinkled with slaked lime

or soot. If slugs have been troublesome to the successional sowings, apply liberal dressings of soot and lime, and strew plenty of soot over the leaves. This last sowing will furnish excellent tops if left in the ground till the spring.

Seakale.—Remove all weeds, and any other accumulations from around the plants, so that the stools may become thoroughly ripened. Applications of fairly strong liquid-manure may be made once or twice in the week.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

The Conservatory and Greenhouse.—Specimen plants of Fuchsias, Campanulas, Lilies, and other species, which are past their best, should be placed out-of-doors in the full sunshine. Camellias which are planted out, should be afforded the utmost amount of air and light. Bougainvillea, Plumbago capensis, &c., may have all weak and exhausted shoots removed, and then be syringed with an insecticide, and thoroughly cleansed; the house also must be washed with soft-soap and hotwater, keeping a sharp look-out for insects (especially mealy-bug) that may be hiding in cracks and crevices. Having done this, the structures will be ready for the housing of the Chrysanthemums and the hard-wooded plants, which should be placed under cover before the end of the month.

Vallotas and Agapanthus.—These plants should be afforded manure-water at regular intervals, especially if the pots are crowded with bulbs and roots. The white-flowered *Agapanthus umbellatus* is a useful plant for decoration indoors at this season.

Carnations.—The layers of the Malmaison section may now be placed in large 48's, good turfy loam, and leaf-mould and sand being employed in the potting. The soil should be made moderately firm, and the pots stood on a bed of coal-ashes, in a cold pit, and close to the glass. Afford them shade in sunny weather for the space of one week; apply water very carefully until the roots reach the sides of the pots, and admit air day and night. Carnations of the Tree or winter-flowering varieties standing outside should be removed to a cold pit, and the sashes need be used only during heavy rains. The flower-stalks should be staked early, these being apt to snap off if not supported with stakes. The single-flowered Marguerite varieties may be thrown away, and only the doubles retained. The latter should be disbudded in moderation, and may be given weak manure-water twice a week. These plants may remain outside for the present.

Cinerarias.—Let these be potted before they become pot-bound, and the final shift should be given previous to the flower-stems appearing. For winter-flowering plants, pots of 5 to 6 inches across are large enough, as when well rooted weak manure-water may be given them. Let the plants be kept cool at all times, and if ordinary cold frames are used to cover them, place a brick under each corner so as to ensure free ventilation.

Primulas.—The earliest plants may be removed to a greenhouse, and a night temperature of 55° to 60° maintained. Occasionally weak guano and soot-water may be afforded the plants. Let the plants be shaded from bright sunshine, and damp the paths and stages several times daily.

Stocks of the Intermediate section, and Stock Princess Alice.—Seeds of these varieties may now be sown in pans or boxes for spring flowering, keeping them in the dark till germinated, and afterwards place the pans, &c., close to the glass with the sashes of the frame tilted at the top and bottom. Pot off the seedlings early into small 60's, using rich light soil, and shift them later into 48's, wintering them in a cold pit.

Violets.—The long runners may now be removed, leaving only the short stout offsets near the crown, which will continue to produce flowers after the main crowns cease to do so. About the middle of the month let a brick-pit or stout garden frame be filled with tree-leaves, making the bed very firm and quite level, and over this put soil to the depth of 1 foot. Having done this, lift the prepared plants with all the soil that will cling to the roots, and plant them in the bed of soil, pressing it firmly about the ball; afford sufficient water to wet the soil throughout, and leave the plants exposed to the air till frosts set in.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Ilchester, Abbotsbury Castle, Dorsetshire.

Propagation of Bedding Plants.—During the next few weeks cuttings of all of the various species and varieties of plants employed in filling the beds should be taken in quantity, allowing for losses by damping-off and other causes. Before doing this, a mixture of soil consisting of two parts finely-sifted leaf-mould and one each of mellow loam and clean coarse sand should be well mixed together a few days before being used, and stored under cover. The required number of pots and cutting-pans should be cleaned and crocked in readiness for use. The crocks should be rather plentiful, so as to aerate the soil, and thus keep it sweet for a considerable period of time. The soil, which should take up two-thirds of the space in the pots, should be made moderately firm, and receive a thin coating of sharp sand. Having inserted the cuttings, afford water to settle the soil about them. Pelargoniums of the zonal section strike well out of doors, but other plants do better in frames, hand-lights, &c. At first the gardener should keep the soil merely moist, and sprinkle the cuttings with a fine rose water-can or the syringe, doing this at the end of sunny days; and when roots have formed more water will be required. Ivy-leaf Pelargoniums should be placed close up to the lights in cold frames; or frame-lights supported on pots, which will answer the same purpose.

Pentstemons and Veronicas, Pansies and Violas, &c., root readily on spent Cucumber or Melon hot-beds, simply removing the soil and putting a sweet compost in its place. The cuttings should be inserted in rows, and well watered-in. If the cuttings are kept rather close, and the lights closed entirely in the afternoon, rooting soon takes place.

Coleus, Ageratum, Mesembryanthemums, Verbenas, Lobelia erinus, Salvias, Fuchsias, Lavender, Heliotrope, may be increased by taking ripened side-shoots, cutting away the lower leaves, and inserting them in pans filled with soil, having more sand in it than is needed for Pelargoniums. Place these cuttings in an intermediate temperature, 60° to 70°, and if they droop, bell-glasses should be placed over them. *Coleus* and other soft-leaved plants are sure to need glasses; and these should be removed in the morning and wiped, to prevent damping-off. When rooted, pot up into 60's, and keep them on light, airy shelves.

Tuberous-rooted Begonias may be increased by taking stocky side-shoots.

Crozy's Cannas and various Daturas may be increased by offsets taken from the base of the plants. These strike readily in mild bottom-heat, and good rooted plants are thus obtained for the next year.

Houses, &c.—Now is the season to repair paint, white-wash, and generally cleanse all garden-structures, not omitting the heating apparatus.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Melons.—In whatever stage of growth the plants are now, whether setting, developing, or ripening their fruits, there should be less moisture given after this date. Plants carrying nearly ripe fruits should be given much less water at the roots, the quantity being reduced gradually. In dull weather more fire-heat must be employed, in order to maintain buoyancy in the air of the houses and pits. Some small amount of ventilation should be afforded day and night; and a gentle degree of heat kept in the pipes will prevent the cracking of the fruit, usually caused at this season by excessive condensation of moisture upon them during cold nights. The soil in which plants with swelling fruits are growing should be kept moist; and if cankering of the stems shows itself, let lime and charcoal in powder in equal proportions be applied. Let the shoots be stopped at the points regularly, and keep the foliage clean and free from insects by syringing freely on fine mornings. The bottom-heat should be kept at 75° to 80°. When plants are in flower, daily attention must be paid to setting the flowers, the latter operation being carried out for two or three days in succession, so as to make sure of a good set. All weakly fruits and shoots should be removed at this stage. Let more than the number required for a crop be set, and keep the soil

dryish for a fortnight while the fertilisation of the blooms is in progress. As soon as it can be seen which are the likelier fruits, select four of the best and most evenly distributed, removing the rest of them. Afterwards let the plants have liquid-manure afforded them occasionally, taking care not to saturate the soil just about the stems. A collar of clay put round the stem, about 3 inches distant from it, will form a protection; and if the enclosed space be filled with lime or charcoal the plants will not become cankered. This is a precaution especially necessary with extra-strong plants in the earlier stages of growth.

Late Crop.—Plants for affording the last crop of Melons should be planted forthwith in a lean-to-house well supplied with bottom and top-heat. The compost used should be very porous, and consist of a rich turf-loam four-fifths, and one-fifth of mortar rubble and charcoal. The aim of the gardener should be to obtain well developed leaves of good substance by airing the house freely on fine days.

Winter Cucumbers.—The plants should be set out early in the present month, in a house or span-pit that has been well cleansed and white-washed, and the glass rendered weather-proof. The apparatus for affording heat should be examined, and cleared of rubbish that may have accumulated about it during the summer, so that no heat be lost. Place a good layer of rather dry littery manure over the bricks, and if the depth of the pit will allow, a hot-bed of tree-leaves and short dung 2 or 3 feet deep may be put in. Let a layer of soil 3 inches thick be placed over this, and at intervals of 3 feet make hillocks, 1 foot high and the same in diameter, of light turfy loam. When the soil is warmed throughout, put out one plant on each hillock, choosing plants which are not pot-bound. Keep the house close for a few days afterwards, then afford air, gradually increasing its volume, and keep the house rather cool for a month. Add fresh loam to the hillocks as the plants gain strength, and remove all male blooms as they appear. The plants should not be allowed to bear fruit until well established and good growth has been made.

PANAMA OR JIPIJAPA HATS.

ECUADOR is the real home of the hats wrongly designated under the name of "panama," and according to the *Recueil Consulaire Belge* this industry afterwards extended to Peru and other countries, even to Yucatan in Mexico. Everywhere in Latin America the hat is known under the name of "Jipijapa," in honour of the city where its manufacture was first started. It is only in Europe or outside of the producing countries that this hat receives the name of a city which does not make it. The finest hats are made in Jipijapa and at Montecristi, in the province of Manabi (Ecuador), this industry being one of the greatest resources of the country. The toquilla or leaf of a small plant is used for this purpose. It grows abundantly in the country, the leaves coming up in the shape of a fan. The plant is the *Carludovica palmata*. There are jipijapas of all qualities, from those costing a few pence to those worth several pounds. The merit of these last, really marvels of fineness, consists as much in the scarcity of the straw as in the difficulty of the weaving, and therefore it is exceptional to find these hats on the general market. The hats of current sale cost a few shillings, the finest not exceeding from £5 to £6 in price. In buying a panama it is necessary to ascertain two things—that the straw is whole and that it is not stiffened. It is not easy to recognise this first condition. In order to make two from one, the weavers split the straw with such perfection that unless a person is accustomed to such examinations it is almost impossible for him to distinguish the difference. Of equal fineness the hat made from whole straw is worth three or four times the one manufactured from the straw that has been split. The second condition is easily recognised, for the hats are stiffened to make the straw firmer and white. Good toquilla is white and stiff enough not to need any gum, and only ordinary panamas are stiffened. *Journal of the Society of Arts*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions or to return unused communications or illustrations, unless by special arrangement.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR SEPTEMBER.

WEDNESDAY, SEPT. 5	{ Glasgow and West of Scotland Horticultural Society's Show, in St. Andrew's Hall (2 days).
FRIDAY, SEPT. 7	{ National Dahlia Society's Exhibition, at Crystal Palace (2 days).
TUESDAY, SEPT. 11	{ Royal Horticultural Society's Committees, at Drill Hall. { Paris Exhibition (temporary Show).
WEDNESDAY, SEPT. 12	{ Derbyshire Agricultural and Horticultural Society's Show, at Derby (2 days).
THURSDAY, SEPT. 13	{ International Pomological Congress, at Paris (2 days). { Boston Dahlia Show, in the Drill Hall.
TUESDAY, SEPT. 25	{ Royal Horticultural Society's Committees (Dahlias). { Paris Exhibition (temporary Show).
THURSDAY, SEPT. 27	{ Royal Horticultural Society's Show of Fruits, at the Crystal Palace (3 days).

SALES FOR THE ENSUING WEEK.

EVERY DAY EXCEPT SATURDAY, Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY, SEPT. 7.—Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—59'4".

ACTUAL TEMPERATURES:—

LONDON.—August 29 (6 P.M.): Max. 71°; Min. 56°.

August 30: Weather slightly overcast and cold.

PROVINCES.—August 29 (6 P.M.): Max. 64°, Gloucester; Min., 54°, off Berwick.

Those who have occasion to consult the *Botanical Magazine* will find with interest that an illustration of a natural hybrid has found its way into its venerated pages in the August number. In the present state of botanical knowledge, when no one can state with certainty where a "species" begins and where it ends, and when no one can say or gauge what it will do when the conditions of the environment are changed, at such a time and in such circumstances it will be felt that the time has come for the recognition of hybrids. No doubt the utmost care and circumspection will be taken in the *Magazine* to insert none whose record is incomplete or conjectural. Such rigid accuracy is not attainable, nor is it called for in horticultural publications. We fear the majority of our horticulturists are interested solely in the beauty or economic value of the plants they cultivate, and only a small minority care for plants as organisms to be studied and arranged scientifically. Nevertheless, the universal spread of the theory of evolution has opened men's minds, and led them to find interest in objects which before

they valued not at all, or if at all, then only for the gratification of the sense, not of the intellect.

Now it is not uncommon to find among the Chrysanthemum enthusiasts, or the devotees of any other flower, evidence that the seed sown by DARWIN and HERBERT SPENCER has not only taken root, but is bearing fruit. The introductory addresses read to the several Conferences organised by the Royal Horticultural Society, or some of them, bear out our assertion. Strange that the teachings of KNIGHT and HERBERT, predecessors of DARWIN, had so little influence on their contemporaries!

We do not think the most conservative botanist could reject or ignore natural hybrids, when proof of their nature is forthcoming.

According to the *Magazine*, nineteen natural hybrids amongst Orchids alone have been proved to be actually what they were supposed to be by the art of the hybridiser. He has produced artificially, by fertilising one species with the pollen of another, the forms which induced the botanists, and, as it turns out, rightly, to consider them of hybrid origin.

Cattleya × *Whitei* was introduced from Bahia by Mr. WHITE, and flowered with Messrs. Low & Sons in 1882 (see *Gardeners' Chronicle*, 1882, vol. vii., p. 586). REICHENBACH suggested that it was a hybrid between *C. labiata* and *C. Schilleriana*, but the objection to this view was that the supposed parents lived, as then surmised, some 800 miles apart. Subsequently, however, Mr. ROLFE ascertained that it had been found growing on a tree in Bahia, together with *C. Schilleriana*, so that the difficulty as to locality was removed.

Of course, some may say that we are dealing with one variable widespread species, and that hybridity is not possible. That shows the necessity for further investigation. At any rate, not many horticulturists will doubt the fact. The botanist will find the most valuable evidence brought to his disposal by the hybridists, and the future limitations and circumscription of species will in many cases be determined by the information brought to light by the hybridist. On this account we gladly welcome in the *Magazine* the picture of a hybrid Orchid whose parentage has been proved, and trust it may be the precursor of others. It will be more useful than the representation of a plant whose only ground for notice is the fact that it may have obtained an Award of Merit.

Flower Show Groups.

In constructing these groups many things have to be taken into consideration besides the taste of the designer, or rather we may say, that his taste shows itself in the way in which he deals with an aggregate of different and some conflicting factors. He has first to consider the locality, which in most cases is a span-roofed tent. In this he is allotted a certain amount of space, the shape of the area to be filled being determined by the form of the tent and the requirements of neighbouring competitors. In some cases he is happy enough to have the whole space at his disposal, and can then group his plants as he thinks best—but this is rare; it more commonly happens that he has to adapt himself to the environment. As all the competitors have to do the same thing, the competition becomes an illustration of the struggle for the fittest. Judges are very apt to give undue prominence to the rarity or value of the plants exhibited. But this is a great mistake. The rarity or value of

a plant is better estimated in other classes. A competitor who makes the best use of the commonest materials is better worth encouraging than is one the excellence of whose group depends upon the rarity of the plants of which it is composed.

Then comes the eternal question of conventionality or natural arrangement. Should the designer attempt to produce an avowedly artificial design? or should he conceal his art as much as possible, and bend his efforts to produce a natural group? A group of Chrysanthemums is generally wholly artificial in arrangement; the delightful little alpine rockeries seen at the Temple and other shows are more or less imitations of Nature. Which plan the artist should adopt is obviously a matter of circumstance, so that we shall not attempt to pronounce an opinion as to which is best. In any case there are certain rules to be followed: the individual plants must not be too crowded, they must be well seen, their forms must be elegant or distinctive, assorting well with their companions or boldly contrasting with them. There is a danger in the latter case that the contrast may be too great, and that the eye may be arrested by the prominence of particular plants to the detriment of the others. The same remarks apply with even greater force to the arrangement and disposition of colour. This is a study by itself, and the time allotted for staging can rarely be sufficient for this purpose. Long experience and preliminary trials, however, surmount this difficulty.

It is usual to say that taste is inborn and cannot be learnt; but that is not wholly true. When a few years ago, at one of the exhibitions, an "anthropometric" laboratory was established, it was shown that although there were great variations in the degree of the appreciation of form and colour by different individuals, yet that everybody (the halt, the lame, and the blind excepted) had the power of discrimination. It was not the monopoly of one, or of a few. This being the case, it is evident that the faculty is capable of being cultivated, and that those who are deficient in "taste" or appreciation need not despair, for study and experience will in a large measure develop what Nature has afforded only in a minor degree.

The group we figure in our Supplementary Illustration was constructed by Mr. CYPHER, of Cheltenham, at the last Wolverhampton show, where it obtained the 1st prize, a Gold Medal. In one week this exhibitor obtained the 1st prize for similar groups at Northampton, Leicester, and Kidderminster, so that experience is not lacking!

The Wolverhampton group was pyramidal in outline, with "bridges" at the angles. The apex was occupied by a Palm, *Phoenix rupicola*, around whose stem were apparently climbing Ferns, such as *Nephrolepis* and coloured *Caladiums*. The flying buttresses or bridges were furnished with *Asparagus* and other foliage plants, together with *Odontoglossum* flowers. At the base of the bridges were raised groups of dwarf Bamboos, *Caladiums*, and other foliage plants, intermixed with fine flowers of *Cattleya gigas* and *C. Gaskelliana*. The central mass was made up of graceful *Cocos* and richly coloured *Codiaeums* and *Caladiums*. The flowers were Orchids of various kinds, *Lilium longiflorum*, &c. The principal *Codiaeums* or *Crotons* made use of were *C. Warreni*, *Cheloni*, *Baron Rothschild*, *Thompsoni*, *Aigburth Gem*, *gloriosum*, *Prince of Wales*, and *Reidi*. It is evident that a photograph, however good, can give but a defective idea of such a group.

ROYAL HORTICULTURAL SOCIETY'S FRUIT SHOW AT THE CRYSTAL PALACE.—The Royal Horticultural Society's seventh annual show of British-grown fruit will be held at the Crystal Palace on September 27, 28, and 29. Intending exhibitors may secure schedules and other necessary information from the Secretary, Royal Horticultural Society, 117, Victoria Street, London, S.W.

NYMPHÆA LOTUS DELICATA.—This is the name given at Kew to a *Nymphæa* lately received from HENRY A. DREER, nurseryman, Philadelphia, as *N. Kewensis*, a name which belongs to a hybrid raised at Kew fifteen years ago, and figured in the *Botanical Magazine*, t. 6988, that had flowers 9 inches across, coloured rich rosy-pink. Unfortunately, only one plant was raised, and it died one winter, so that *N. Kewensis*, true, is no longer in existence. It is possible, however, that Mr. DREER's plant is a cross between two forms of *N. lotus*. It has leaves exactly like those of the form known as *dentata*, and flowers essentially the same as that species, but the petals are coloured a delicate blush-pink, almost white at the base, and they are of variable width, usually broadest in the upper half; the stamens are orange-brown. The width of the largest flower borne at Kew is 5 inches. Is it possible that this is the *N. delicatissima* of Mr. DREER's catalogue? "After the style of *dentata*, handsome foliage, of a metallic lustre; flowers of a pleasing delicate pink. American origin."

LEE, BLACKHEATH, LEWISHAM, AND WEST KENT HORTICULTURAL SOCIETY.—The annual outing of the members of this society took place on Monday, Aug. 20, when they visited the gardens of Aldenham House, Elstree, by permission of Lord ALDENHAM. Having seen everything of interest in his lordship's admirably-kept garden, they proceeded to Messrs. SANDER & Co.'s nurseries at St. Albans, the cathedral, and other places of interest in and about that town.

THE PERONOSPORA IN GREECE—as we recently stated would prove to be the case—has ruined the Currant crop, and with it many cultivators. The Patras report has it that the damage has reduced the crop to about a third of its usual quantity, practically destroying the Greek vintage, including that of the Ionian Islands. There will, of course, also be a great falling away in the industries connected with the Currant business and the wine trade, by which the labouring classes earn their livelihood. British shipping will also as a consequence suffer to some extent; imports from Britain will also be greatly reduced. The above reports are confirmed from Athens. Some fortunate planters will probably greatly profit by this state of things, but for the rest there appears to be only bankruptcy.

THE MANCHESTER BOTANICAL GARDENS, like the Crystal Palace, London, have recently afforded facilities for a display by co-operators. When calling upon Mr. P. WEATHERS last week, we found the exceptionally fine building, where most of the Manchester shows are held, quite filled with exhibits and stalls belonging to the Manchester and Salford Co-operative Societies. What a boon such a house as that at Manchester would be if it were in a central position in London, where the need of such a space is so much greater! By the way, we believe that the financial position of the Manchester Royal Botanic Society is improving, and it is said that the present year will prove to be the most satisfactory one for a long time past.

APPLES IN THE UNITED STATES.—We learn from official quarters that while there has during the past month been a slight decline in the condition of Apples, there is not an important Apple-producing State in which the condition at the last survey did not exceed the ten-year average. The indications still point to a phenomenally large crop.

ASTER SICKNESS.—Mrs. RADFORD, of North Devon, has forwarded samples of very fine Asters

which are one by one showing signs of sickness. She at first thought something was wrong with the bed, but in time a new and healthy bed was attacked, showing that the cause did not lie in the soil. We have examined the plants submitted, and find they have been attacked by the minute annelid known as the Aster-worm. This destructive creature was described in our pages some four years ago, since which time it has made its appearance in many different parts of the country. There seems no hope for the beds when once the worm has begun its work, but it would be well for gardeners to test the effects of various insecticides by applying the plants freely with a solution as soon as signs of sickness appear.

PRODUCTIONS OF THE JEWISH COLONIES IN PALESTINE AT THE PARIS EXHIBITION.—We are informed by Mr. S. ELDOB, manager and director of the Palestine Wine and Trading Company, Limited, whose business premises are at 11, Bevis Marks, City, that the Jewish colonies in Palestine have obtained at the Paris Universal Exhibition of 1900, a Gold Medal for their wines and Grape-brandy, and a Silver Medal for fruit-trees and fruits.

FLOWER-GARDENS AT KINGSTON.—Sir TREVOR LAWRENCE, Bt., M.P., President of the Royal Horticultural Society, has kindly promised to present the prizes to the successful competitors in the four classes for front flower-gardens and window decorations, attached to houses not rated over £20 in the Borough of Kingston. These classes were instituted by the present Mayor, Alderman MOATT, for the first time this year. In three classes for front gardens of diverse sizes, and for one for window decoration only, there were no less than eighty-four entries. There were originally offered twenty cash prizes, but because of the competition, that number has been increased to thirty. The presentation will take place at 4 P.M. on Saturday, September 8 next.

THE NATIONAL DAHLIA SOCIETY.—Mr. J. F. HUDSON, Hon. Secretary, wishes us to inform our readers that, in addition to the classes already provided for in the schedule, there will be on September 7, at the Crystal Palace, a class for fancy Dahlias in competition for special prizes, kindly offered by the Duchess of SUTHERLAND, patroness of the society, viz., Class 5A, eighteen fancy Dahlias in six varieties, three blooms of each, £2 2s., £1, and 10s. On September 25, 1900, the committee will meet at 12 o'clock at the Drill Hall, St. James' Street, Westminster, S.W., on the occasion of the meeting of the Royal Horticultural Society on that date, when certificates will be awarded to such seedling Dahlias as may be deemed worthy. Entries should be announced to the Hon. Secretary at the Drill Hall, before 11.30 on the morning of the show. Mr. A. DEAN has kindly offered a special prize of 10s. 6d. for the best bunch of a New Cactus Dahlia exhibited at this meeting.

CLOVES AND SLAVERY.—As all the world knows, it receives its supply of Cloves from the islands of Zanzibar and Pemba; the yield last year was 570,600 frasilas, or, at 35 pounds to the frasila, equal to 19,971,000 pounds! This is the largest crop ever reported, and was 8,061,259 in excess of that of the preceding year. Notwithstanding this produce, however, the plantations are not being cultivated as they ought to be—a falling-off in this respect having become noted ever since the edict abolishing slavery was promulgated in 1897. Nature has been very bountiful, but she must be assisted more by free labour than appears likely to be given by those "coloured persons" who find laziness more congenial to their feelings than moderately hard work. Attempts are made by means of fair wages to get work out of the emancipated slave; he is also tempted by free grants of land in exchange for a certain supply of labour, but the bait does not appear to take freely. Some effort has been made to raise crops other than Cloves, but the results are unsatisfactory. Only time and very

judicious management of the native workers rescued from slavery can be trusted to retain for the Sultanate that celebrity it so long enjoyed by the aid of slavery.

AN EFFORT ON BEHALF OF THE GARDENING CHARITIES.—By kind permission of R. OLIVERSON, Esq., the gardens and grounds of Ragley Hall, Alcester, were thrown open to the public on August 23, and a collection made by means of boxes, &c., in favour of the Gardeners' Royal Gardeners' Benevolent Institution and the Royal Gardeners' Orphan Fund. The gardens were looking very charming, and the system of flower-gardening carried out by Mr. A. D. CHRISTIE was greatly admired. Large pyramids of Plumbagos and Pelargoniums 6 feet high and nearly 8 feet in diameter were conspicuous features, and beds of Cerastium, Coleus, and Lobelia, representing stripes of red, white and blue colour, were generally popular. The weather was not satisfactory, but there were present considerable numbers of visitors, and the sum of £3 5s. was obtained for the charities. This is an excellent manner by which any owner of a good garden may help these deserving institutions.

FRUIT IN CANADA.—We are in receipt of sundry somewhat disjointed statements as to the outcome of the fruit crops in Canada, but the following note will be found to cover a large area of fruit plantations. Apples and Pears promise well, fruit large and free from black spot. (By the way, the codlin-moth did not appear to be in such plenty as last season). There are a number of new varieties fruiting this season, of which more may be heard later on. One report says:—Our fruit crop will excel any former year, both in quantity and quality. It is further observed that a very decided difference is to be seen between sprayed and unsprayed orchards, both in fruit and foliage. Wood-growth on most varieties is healthy and vigorous—rains having brightened up the orchards. Plums, it was noted in sundry localities, did not share in the then general promise. The thinning of Pears had to be adopted to keep the trees from breaking down. Pears worked on the Quince have proved a successful experiment, the reports being quite satisfactory. The work of Dr. WILLIAM SANDERS, director of the Dominion Experimental Farms, appears to be giving forth good fruit.

THE RECENT EXHIBITION AT SHREWSBURY.—Notwithstanding the showery weather that prevailed during the two days this fine show was open to the public, the number of visitors was very satisfactory. The honorary secretaries courteously inform us that the receipts upon Wednesday the opening day, amounted to £797, and there were present 18,000 persons. On Thursday, the second day, the receipts were £1,808, and the number of visitors 60,000. The total receipts, which include other items than the gate-money, were £46,000. Financially the exhibition was second only to one on record. As we published in our last issue a detailed report of the exhibits, there is little remains to be said, but we are informed that in Class 78, for the best new Grape exhibited, the 1st prize has been awarded to Diamond Jubilee, shown by Messrs. D. & W. BUCHANAN, Forth Vineyards, Kippen. When our notes were taken the 1st prize ticket was attached to two bunches of Directeur Tisserand shown by Sir J. W. PEASE (gr., Mr. MCINDOE). As the Shropshire Society award gold medals of two sizes to non-competitive exhibits, we may say that Messrs. JONES & SON, Shrewsbury, gained a large one for their exhibit of Dahlias and Sweet Peas. On p. 173 we reproduce a photograph of the first prize exhibit in the class for 24 dishes of fruit.

THE SWEET PEA CLASSIFICATION COMMITTEE.—We learn from a Sweet Pea expert that a Committee met recently at the Hotel Windsor, and drew up a list of the three best varieties in each colour-section. This list will by and by be made public, and will

no doubt come in for considerable attention and criticism, adverse and otherwise. It ought to be remembered that it is a much easier task to criticise with a list before the critic than it is to sit down and draw up such a list. We do not expect, our correspondent adds, that the Committee will claim for its list that it is perfection, and exhausts the subject; in fact, it is said that several members of the Committee who were out-voted regarding certain varieties, declared that before another year passed the varieties in question would be added to the list. The reference to the Committee should be kept in view "to select the three best varieties in each colour-section," as this must explain why a long list could not be prepared, and we maintain that a long list in any section would have defeated the chief object such selections are intended to serve. The Committee acted wisely in not including too many novelties in the selections. Novelties should have an extended trial, and reports should be obtained from growers in different localities before they are stamped with the hall-mark of a committee of Sweet Pea experts. The question of the permanency of a Sweet Pea society or committee is being much discussed. We cannot think, even if it were possible, that a huge Sweet Pea show held annually would serve any very good purpose; but a Classification Committee, which from its composition would possess and inspire confidence, would do good work, and such a committee might hold a small exhibition for novelties annually in connection with some of the big shows; and if it organised a large show once in five or ten years, it would do very well.

MR. J. W. MCHATTIE, whose retirement from Strathfieldsaye we notified recently, has now been appointed gardener to WHITAKER WRIGHT, Esq., Lea Park, near Godalming, who is, we believe, engaged in making a first-class garden at this place. Those who saw the magnificent Grapes Mr. MCHATTIE exhibited at the Drill Hall on Tuesday last, from the Duke of Wellington's garden, will share our hope that he will meet with ample opportunities in the new establishment to continue such skilful cultivation. Mr. MCHATTIE will remove to Lea Park in October.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Mr. G. J. INGRAM, the Secretary of the Institution, desires us to state that Mr. A. MACKELLAR has forwarded a donation of £5 from the Sandringham Horticultural Society in aid of the funds of this charity.

PUBLICATIONS RECEIVED.—*Nova Scotia Provincial Government Crop Report*, July, 1900. A return prepared by the Secretary for Agriculture of the then state, and future prospects of the principal field and orchard crops of the province of Nova Scotia, such as Potatoes, Apples, and root crops, were good. Published for Government of Nova Scotia Office of Agriculture, Halifax.—*Pollination in Orchards*: by S. W. Fletcher. Giving the reasons why flowers of fruit-trees do not set; self-sterility and its main cause; varieties grown in this country and found self-sterile in the United States of America, viz.:—Pears: Duchesse d'Angoulême, Williams' Bon Chrétien (Bartlett), Clapp's Favourite, Kieffer, and Winter Nelis. Apples: Spitzenburg Reinette, Winesop (Sops in Wine). Plums: Coe's Golden Drop, French Prune, and Peach. Cherries: Napoleon, Belle de Choisy, and Reine Hortensi. The pollinisers should bloom at the same time; they should be abundant pollen-producers, and should cross readily. Among Pears, the Kieffer is a good polliniser for the Pears above mentioned, which bloom together with these, and its influence in giving an increase of size to the fruits is very marked, as in Sæckel, whose flowers were rendered fertile with its pollen. Some varieties of Plums will not cross with each other, and it is therefore a matter which orchardists and hybridists should discover for themselves.—Cornell University Agricultural Experimental Station, *Bulletin* 174, Ithaca, New York: "The Problem of Impoverished Lands," compiled by L. H. Bailey. *Bulletin* 175: "Fourth Report on Japanese Plums," by L. H. Bailey. *Bulletin* 176: "The Peach-tree Borer," by M. V. Slingerland. *Bulletin* 177: "Spraying Notes," by L. H. Bailey and others. *Bulletin* 178: "The Invasion of the Udder by Bacteria," by A. R. Ward. *Bulletin* 179: "Introduction to Field Experiments with Fertilisers," by A. L. Kinsley. *Bulletin* 180: "The Prevention of Leaf-curl in Peaches," by W. A. Murrill.

PLANT PORTRAITS.

APPLE "LECKERBISSEN"—An old Dutch variety, of obliquely oblong-shaped depressed eye, short stalk, and yellow flesh. *Garten Flora*, t. 1478.

BEGONIA REX × B. DIADEMA.—*Garten Welt*, July.

ROSE HYBRID TEA, "EXQUISITE."—*Gardening Magazine*, July 14.

SECHUUM EDULE.—A very beautiful figure of the Chayote occasionally seen in our markets, is given in the *Revue Horticole*, August 1.

VANDA CATHCARTII.—*Revue Horticole*, August 16.

THE WEATHER IN WEST HERTS.

SINCE the last report was issued, a great change in temperature has taken place, all the days of the past week having been cold, while the nights, taken as a whole, have been of only seasonable warmth. The ground temperatures have, in consequence, fallen very considerably, the reading at 2 feet deep being now about 1° warmer, while that at 1 foot deep is about 2° colder, than their respective averages for the end of August. At the latter depth the reading has fallen nearly 10° during the week. Rain fell on four days, but to the total depth of only about half an inch. No measurable quantity of rain-water has come through the bare soil percolation gauge for more than a week; and excepting a few drops in the middle of July, none whatever through the gauge covered with short grass for nearly eighteen weeks. The winds have again been light, and throughout the last four days have come exclusively from some point of the compass between north and east. For a summer month the atmosphere was, as a rule, rather humid; and the record of bright sunshine poor. *E. M., Berkhamsted, August 28.*

PELARGONIUM CUTTINGS.

THE successful striking of these cuttings outdoors is a simple matter in the summer when the weather is dry; but when it is deferred, as it usually is, for the sake of the flower-beds, till the end of August or the beginning of September, the long damp nights, and often cold and cloudy days, combined with the succulence which often characterises the shoots of Pelargoniums at that season, sometimes make the rooting process difficult. This means disappointment, as it is often too late to take another lot. If the following points, however, are attended to, the loss of these cuttings by damping-off will be greatly reduced. In the first place, the cuttings before being put in the earth, should be laid out thinly somewhere (not in too hot a place), to let the newly-out parts of the stalks get dry, when they also get harder and tougher, and consequently more ready to form a callus, and less liable to rot. In the second place, some of the shoots of the old plants are much more juicy than others, and it is the cuttings from these juicy ones which are the most inclined to damp off. Only the hardest shoots should be taken, not those which can be lightly crushed between the thumb and finger. The short lateral spurs are the easiest of all to strike, especially if they are simply broken off at their junction with the parent-stem, and not cut. This method, however, has a disadvantage attached to it, for if the old plants are to be taken up and kept another year, fresh shoots are not likely to come where these lateral spurs have been broken off, and consequently the plants may have long bare stems. So much for taking the cuttings. In putting them in the pots, four matters should be remembered—good drainage must be put in the bottom of the pots; some sand must be put round each cutting, which is best done by putting it on the top of the earth round the edge of the pot before putting the cuttings in; they must be afforded only just enough water as will keep them from drying up, as it will not damage them to let them wither a good deal the first two or three days; and lastly, they must be set in as sunny a place as possible. When they have struck root, they should be given no more water than is absolutely necessary to keep them alive, as the object is to get a hardened plant which will not damp off in the winter. Should the weather be persistently wet, it is a good plan to set the pots in a cold frame, and raise the sash by means of a block of wood at each end, so that it keeps the rain out, but not the air. *Alger Petts.*



HOME CORRESPONDENCE.

THE FRUITING OF EARLY RIVERS NECTARINE IN THE OPEN.—Any gardener or amateur not having a wall against which to train trees of the Peach and Nectarine, and having misgivings about planting them away from a wall, should visit Mr. C. Turner's nursery at Slough at the present time, and inspect some rows of healthy bushes of Early Rivers Nectarines, which are fruiting freely. The trees possess fine crowns, and the fruit is all that can be desired, being large, and beautifully coloured, many of them being good enough to put in a collection of fruit at a first-rate show. The soil of this part of the nursery is a rather heavy loam, from which bricks are being made on the adjoining land. The lesson to be gleaned from an inspection of these trees may lead some cultivators to plant early Peach and Nectarine in the open for the production of fruit for the market, as well as for private use. The trees at Slough are growing on an unsheltered piece of land. The most suitable varieties are Early Alexander, Waterloo, and Hale's Early Peaches; Early Rivers, and Lord Napier Nectarines. These fruits ripen towards the end of August or early in September, therefore in warm weather. Ordinary Peach culture would suffice, no special kind of treatment being required. *H. W. Ward, August 25.*

TRADESCANT'S HEART CHERRY.—A fruit-growing friend interested in Cherries kindly sent me so late as August 21 a few very fine fruits of Tradescant's Heart Cherry. It is a large, almost black, roundish variety, of solid flesh and fine quality. This variety is one of the latest of sweet Cherries. It does bear a close resemblance to Noble, the new one to which Mr. Bunyard recently made reference, and no doubt anyone obtaining one variety will do well to get the other, to test relative merits. Probably when the new variety becomes plentiful, nurserymen will be enabled to say how far one may be better than the other. Of Tradescant's Heart perhaps one reason why so little is heard of this Cherry is, that generally it is listed as St. Margarets, but as I previously remarked, Dr. Hogg regards Tradescant's Heart as the proper appellation. *A. D.*

ENTOMOLOGY.—Notice of rare captures have appeared in several papers. It may interest your readers to know I took a fine Papilio (Colias) Machaon in our Maidstone nursery. Although an ardent collector thirty years back, I never before came across this much coveted "swallow-tail" butterfly. My children have taken several Colias hyale and edusa. My brother took in the town years ago a Camberwell Beauty (Vanessa antiopa) and Aporus Cratagi at Sittingbourne, but I have never seen or taken either since 1860. *Geo. Bunyard, Maidstone.*

THE ABSENCE OF PLANT LABELS IN THE BEDS AT BATTERSEA PARK.—On Sunday last I paid a visit to this beautiful park, and I am able to endorse everything that is stated at p. 132 of the *Gardeners' Chronicle*; but I noticed an almost entire absence of plant-labels. I admit that a number of white, conspicuous labels disfigure a flower or foliage-bed, especially if they are very large; but I think that small-sized labels, with the names legibly written thereon, might be placed where they could be readily seen by visitors. Gardeners and other persons interested visit the various London parks during the season with the object of noting the plants made use of in filling the beds (many of them for the first time as bedding plants), and the question of names is a matter of some moment to such persons. *H. W.*

THE LILY POND AT BERKSWELL.—Having previously given in the *Gardeners' Chronicle* a sketch of my Lily-pond, I now go on to show what success subsequently followed the planting. Not

feeling safe in wintering the plants in the newly-made pond lest the water should fail, I placed them in a tank in which they were grown during the previous summer in a coach-house, and where they hibernated comfortably, until the end of the month of April of this year, when they were transferred to the outdoor pond. Up to that time they were still in 6-inch pots, plunged in puddle, with water over them. On turning them out, I found them all to be strongly rooted, with the exception of *Nymphaea odorata Exquisita*, which was weak, and so it still remains. After being placed on previously-prepared rich mounds of soil in the pond, they soon began to grow, followed by the flowering season, which commenced on July 4, and from that date up to the present time I have had the pleasure

matella throws up a strong lot of brindled leaves, and has a bold yellow flower; *N. sulphurea* is smaller in leaf than that of *N. chromatella*, but it is quite as much brindled; the flower is a brighter yellow, and for the first two or three days of its life stands about 3 or 4 inches out of the water, which none of the other varieties in my collection does; *N. albida* has beautiful leaves, and sends up a bold white flower with yellow centre; of this variety I have two plants, but neither of them, so far, has sent up more than one flower at a time, and remains longer in flower in the afternoon than any of the others; *N. rosea* has fine dark green leaves, with a decided pink flower and yellow centre. Dr. Paunce's seedling has smaller leaves than *N. rosea*, but much darker, the outer petals of

the growing and flowering of those lovely Lilies quite as much as if the basin was constructed of the purest Klondyke gold. Besides these *Nymphaeas* there are other aquatic claimants, who have made a determined push for a place in the pond; and but for our assiduity in weeding them out, they would soon have absorbed the whole space for themselves. One of these is *Ranunculus aquatilis*, which quickly came into flower, then dropped to the bottom in cloudy masses, which, when handled, feels crisp, rough, and has a rather unpleasant smell, favouring that of seaweed. Another is *Potamogeton natans*, which also came up in extraordinary quantities. *Callitriche aquatica*, *Alisma plantago*, and *A. natans*. It puzzles me to know how all these plants got into this



FIG. 49.—THE SHREWSBURY SHOW.

First Prize exhibit of Fruit in the "Champion" class for twenty-four dishes, shown by the Earl of Harrington (gr., Mr. J. H. Goodacre). From a photo by W. Thurtle, Shifnal. For a full description of the varieties of fruit included, see p. 156 in our last issue.

of admiring from four to ten newly-opened blooms every day. The daily watching for the opening blossoms of the different varieties was to us and our neighbours most interesting. The first to flower was *N. Laydekeri lilacea*, in my notes described as a small pink flower. Next came *N. Marliacea ignea*, a small bloom, which I may describe as by far the deepest crimson of all the varieties that I have. I give that colour for want of knowing how better to describe it. This seems to have been a favourite of my friend Mr. Brydon, of South Lancaster, Mass., U.S.A., as I found he had placed four crosses on the label of this plant, as against three on Robinsoni. *N. Robinsoni* is a very distinct and pretty flower; if these two are to be judged by the colouring, then *ignea* has the advantage, but *N. Robinsoni* has the larger flowers; the leaves of Robinsoni are smaller than those of *ignea*, and are more brindled. *N. chro-*

the flower are slightly roseate, the inner ones pure white with yellow centre. This variety opens its flower earlier in the morning, and closes sooner in the afternoon than any of the others; *N. flammea* has dark shaded leaves, and is a decided pink tinted flower with yellow centre; *N. odorata Exquisita* and *N. Gladstonei* have not yet flowered, but the latter, I am pleased to observe, is showing a flower bud. Only four of my plants show two flowers at a time, these are *flammea*, *lilacea*, *ignea*, and *Robinsoni*; by another year the plants will be stronger and may do better. It is pleasing to see those *Nymphaeas* thrive and flower so well in this very commonplace pond; true, they might look better with the surroundings of a neatly-bricked basin, planted in submerged tubs, but all this means £ s. d. Let no one be discouraged, as it is within the province of anyone who has the command of a pond of water to enjoy

newly-made pond so alarmingly quickly; it may have something to do with it that many years ago the site of this pond formed a drinking-place for cattle, and like all similar ponds, which are plentiful in Warwickshire, would have the usual quantity of aquatic garniture; and the question may be asked whether it is likely that seed from these still lay buried in the soil, ready to spring into life directly they were brought under the germinating influence of light, of warmth, and of their own element water, like, as it is alleged, the Mummy-Wheat of Egypt, which, after the lapse of thousands of years, germinates just as freely when placed under favourable circumstances as if it had never at all been entombed, and of which the great majority of the world are credulous enough to believe, whilst the small scientific minority doubt. [Quite exploded. ED.] W. Miller, Berkswell, August, 1900.

SULPHURING A VINERY.—Calling upon Mr. Norman, of Hatfield, one evening recently, I was glad to find that he was about to fumigate a vinery with flowers-of-sulphur. As a matter of fact, the operation was, as I understood, the last experiment which should decide the number of vessels it would be necessary to use in a house of given dimensions. Mr. Norman said that the experiment was to be carried out on the basis of each fumigator being sufficient for "fuming" 500 cubic ft. As he intimated his intention to send a communication at an early date to a horticultural journal, together with full particulars of the process, I shall merely confine myself to an account of what I saw on this occasion. The vinery to be operated upon was planted with Black Hamburgh Vines, and the fruit was perfectly coloured, the foliage healthy and clean, with the exception of a small patch in one corner of the roof which a large garden sieve would cover. A month previously, red-spider had infested the Vine-leaves at that spot, and the vinery had been fumigated once with sulphur, and the red-spider destroyed without (so far as I could see) affecting the foliage in any way, or spoiling the colour of the Grapes. The fumigation on this occasion was on account of a second slight attack of red-spider; and I may state here that on meeting Mr. Norman a few days later, he said the result of the fumigation was that "not a red-spider was to be seen, or an injured leaf." We went into other vineries that had been fumigated with flowers-of-sulphur, and in every one I could see that the red-spider had been destroyed, and the attacks confined to small areas. When he publishes his experiences, I believe that it will be found possible, if reasonable care be taken, to destroy red-spider in vineries without injuring either Grapes or leaves. I was very much interested by what I witnessed on this occasion, and as soon as the necessary particulars of the process are obtainable, I intend to try the remedy myself. *C. R. Fielder.*

OLD v. NEW STRAWBERRIES.—As the season is again at hand for making new plantations of this most useful hardy fruit, a few notes may not be out of place. Some days ago I saw a complaint that the quality of the Melons of to-day is inferior to that of days of yore, and that the tasting of new sorts was more pain than pleasure, so far as judgment was formed by the effects on the taster's face. I am strongly of opinion that with regard to latter-day Strawberries, it may with much truth be said that there are many good looking "good for nothings." Why have such varieties as British Queen, Lucas, La Constante, and Alice Nicholson, almost gone out of cultivation? For quality there is nothing among recent cultivations to compare with them. A Strawberry without flavour is like a Rose without perfume. Again, as regards earlier Strawberries, have we anything of the present day to surpass good old Black Prince, a variety that over thirty years ago I could always rely upon being ripe in the open in the middle of June, in the counties of Lancashire and Durham, and with its earliness were combined quantity and quality. I now turn to late sorts. What have we to supersede Elton Pine, Frogmore Late Pine, and Admiral Dundas? The latter sort is also, I believe, the largest variety ever raised, for under very ordinary cultivation, I have had fruit measuring 8 inches in circumference. Of all the Strawberries that ever came under my notice, I still hold that Lucas has more good properties than any other variety, it is in fact among Strawberries what Louise Bonne is among Pears. I will only refer to one other old variety which ought to be better known, viz., Comte de Paris, happily this one is not so much lost sight of as some that I have referred to, from the fact that during the past thirty years it has many times been brought out under new names such as Brown's Wonder, Cambrian Prince, Barnes Prolific, Gold Finder, &c. This Strawberry of many names is still unequalled for productiveness. Its only fault is like the Victoria Plum, it bears too freely. It is the poor man's friend. In plant, in fruit, and flavour, it is most distinct. In conclusion, I may say that I feel sure that one of the chief reasons why so many grand old varieties have gone out of cultivation is the fact, that sufficient attention is not given to the importance of frequently changing plants. This is as important as changing seed in Potatoes. Doubtless much of the success that met those two enthusiastic growers, the late W. J. Nicholson and Monsieur F. Gloede, was due to strict

attention to this point. Constantly replanting from the same stock and on the same soil tend to weaken the constitution, especially where the soil is not exactly suitable for Strawberries. *W. Lawrenson, Eaglescliffe.*

EARLY STRAWBERRIES, ETC.—The Strawberries in this garden fruited heavily this year, and in order to ensure as good or better results next year, the entire crop of runners and the lower leaves have been removed, together with the weeds immediately after the last fruits were gathered; and the soil pricked up 2 inches deep, an operation which was very necessary after the trampling the ground had received. I then applied some decayed farm-yard manure, which caused the plants to make strong early growth. The crowns will be strong and well matured before the frosts sets. Half-a-dozen varieties are, as a rule, ample for most establishments. The runners for the making of new beds were layered in large 60's in the month of July, and will not be kept in them a day longer than is necessary, a crop of fruit being required from them next year. I have layered several hundreds of Vicomtesse Héricart du Thury, Royal Sovereign, and La Grosse Sucrée, the first two to be planted for early fruiting. These answer my purpose, and I am doubtful if there are two better ones as early fruiters, taking into consideration their capabilities for being sent by road and rail, and the quality of the fruits. Vicomtesse was excellent in every respect this season, fruits large and good; and Royal Sovereign bore heavily, and the fruits were of a very large size. These large fruits are not all gain, as they are apt to rot very readily if wet weather occurs; and I like fruits of ordinary size in preference to these. The plants should be set out in well manured land, and the position should be the warmest that can be found in the garden. The plants in such positions flower at an earlier date than the main crop plants, and it is prudent to have protective material in readiness to put over the plants as soon as the first blooms open, or the frosts will spoil their flowers, and it is these that give the finest fruits. Dry weather may occur after the plants are put out, and the application of water must not be neglected at that season, nor in the spring, should the land get dry. The best of the late varieties is, in my opinion, Eleanor; and although an old variety, it should always be grown where there is a long continued demand. All runners are removed from the plants as fast as they appear, and a mulching of manure afforded in November. *H. Markham, Wrotham Park Gardens.*

CARNATION MRS. T. W. LAWSON.—In your issue of August 11, p. 115, there appeared a comment upon the American Carnation Mrs. T. W. Lawson. I am a very great enthusiast in Carnations, and received this variety from a lady and gentleman in America last spring, and looked forward to something extraordinary in the way of bloom. The plant came into bloom in the month of June, and if ever I was disappointed with a Carnation I was disappointed with this one. The only good thing about it, in my opinion, is its colour. The size is nothing at all extraordinary; in fact, some of the flowers are very little better than Marguerite Pinks. The flower is very rough in petal, with a saw edge rather than the beautiful smooth edge which we look for in English flowers. The first flowers had no scent, although those now in bloom certainly have a little. As a Carnation grower, I can hardly realise it is worth the room it takes up; and if I grow it at all, it will be merely as showing what the Americans paid 30,000 dols. for, rather than for its own merit. *Robert Sydenham, Tenby Street, Birmingham.*

AN INTERESTING COMPETITION.—In conjunction with my esteemed colleague, Mr. J. Wright, as Surrey County Council horticultural judges, it has been very recently a pleasurable duty to have to deal with the merits of some sixty front flower gardens, and thirty window-plant or box decorations in this old town of Kingston. The competitions were instituted by the worthy Mayor for the year, Alderman Moatt, who from his customary borough grant, furnished the whole of the cost. The classes were for gardens in all cases attached to houses not rated over £20, of which there are many hundreds, even thousands, in the town. The gardens were in each case to be about 1 rod, about half a rod, and about a quarter of a rod in area, besides the window decorations, which were of one class only. It was a surprise to the promoters to

find so many entries being made for the first competition, and it seems, judging by the interest shown, that should the competition be continued, the entries may be doubled next year. It is difficult to over estimate the good which may result to a large town, with its many miles of streets, margined on either side by small forecourts, where flowers or greenery becomes so pleasing and welcome, when encouragement is given to the efforts of those who try to provide pretty gardens. Very many of those seen the other day, which greatly varied, were singularly pleasing, and reflected great credit on those who had thus furnished them. Because of the great competition, the Mayor generously added ten other prizes to the twenty previously offered. This is a form of competition that it would be well did local authorities encourage it in all populous localities. Inclusive of five allotment prizes, the total sum awarded was £14 5s. 6d., and the expenses will be about 30s. *A. Dean.*

WANTED—A CENSOR.—The remark made in your last issue by "A Member," in connection with the Royal Horticultural Society's Floral Committee is so much to the point that it ought to bear some practical fruit. In the course of the season the time of the Floral Committee is largely wasted by exhibits of quite obvious worthlessness, each of which, being duly entered for the Committee's consideration, is usually brought up individually and passed round the table for examination, although everyone recognises that it is a farce to do so, and that valuable time is thereby spent to no purpose. On the other hand, however, it would clearly be far too invidious a task for any individual to veto an exhibit by a previous censorship as suggested; such a censorship would lead to quite justifiable complaints from exhibitors who, however mistaken in their ideas of beauty, improvement, or novelty, have a right to the opinion of the full Committee itself. To meet, therefore, the views of "A Member," who is by no means alone in his opinion, I would suggest that immediately a plant of no obvious merit is brought forward for judgment, the Chairman should direct that it be set aside, and that all the plants thus summarily disposed of *pro tem.* be placed together and inspected by the Committee at the end of the sitting, to determine whether there is anything of merit among them or not. This course would largely obviate the waste of time now to be deplored, while no one could complain, seeing that the whole Committee would have a voice in the eventual verdict, and anything good but unobtrusive would not fail to be recognised, despite the temporary setting aside suggested. *Chas. T. Drury, F.L.S., V.M.H.*

PLANT OF PRIMULA ROSEA DESTROYED BY A MILDEW RUST.—This is very fatal to *Primula rosea* in my garden, when wet succeeds hot summer weather. I do not observe the same disease on any other Primroses, though others are affected with a very fatal mildew here. I always destroy all affected plants, and have tried sulphate of copper, &c., as a preventative. Can you suggest any other remedy? *C. Wolley-Dod, Edge Hall, Malpas.* [Why do you not try the Bordeaux Mixture, or sulphide of potassium, as protectives and destroyers? *Ed.*]

NOTES FROM A CORNISH GARDEN.—The garden here is an acre, and stands 300 feet above sea-level. We have the best crop of fruit for thirty-three years—Plums especially. Plums, Pears, and Apples have been freely thinned. The late gales have not done much damage. Small-fruit crops have been abundant, and we are gathering the last of the Gooseberries from a paling, copied from one at Madresfield Court. I have grafted for several years by the slip-and-tongue method, practised in the great fruit-growing parish of Botus Fleming, near Saltash, and consider it superior to any other method, and far superior to budding for Apple trees. In November, 1892, I planted three maiden Apple-trees that had been budded. The wounds on two have only just healed, and the third has not yet healed, nine years after it was budded. This year I grafted a strong stock about the same size as the budded trees were in 1892. It has almost covered the stock already, and six months after grafting it will have completely healed over the stock. It answers well for grafting trees that are not good enough to keep up to 2 inches in diameter. The slip should be two-thirds of the graft, and the tongue one-third. If the tongue lives, which is generally the case, it holds the graft firmly on the

stock and soon makes a complete union. There is no snag to be cut off, as in whip grafting. Last year, and this, I have inarched contiguous trees of Apple, Pear, and Peach. In some cases a shoot has grown from the union. Sops-in-Wine on Emperor Alexander, Beurré Bosc on Beurré Diel, and Josephine de Malines on Clapp's Favourite. The branch of Clapp's has five fine Pears; the branch on the other side not inarched has only one in the same length of branch. The Emperor Alexander branch inarched with Sops-in-Wine bore five fine Apples, the rest of the tree, which is 10 feet high, and trained pretty flat without espalier poles, had only the same number. Early Alexandra Peach is inarched on oneside with Goshawk, and the other with Pineapple Nectarine, the other side of Nectarine with Alexandra, the other side of Goshawk with Noblesse. We finished Alexandra early in July, about a month later than in 1893. I hope that the strong growers will improve the growth of the weak ones. Goshawk is double the size of either Early Alexandra or Noblesse, all planted at the same time. I am also inarching horizontal and oblique cordons of Apple and Pear, and hope to inarch standard trees overhead. The Peach and Nectarine failed to unite last year—probably worked too late. I think of working some in the autumn, as soon as the young wood is ripe. In some cases I have notched in one end of the inarching. *Henry Rogers, Captain, R.N., Hartley, Plymouth.*

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 28.—The meeting on Tuesday last in the Drill Hall, Buckingham Gate, Westminster, was not nearly so poor an affair as that held a fortnight previously. Indeed, there was quite an average show, and the Hall had a well-furnished appearance, but in respect to the number of visitors that attended, it was almost as glaringly apparent as on the last occasion that a large number of worthy horticulturists have gone to make holiday. The display that was made owed very little indeed to Orchid exhibitors. There were no groups of these plants, and the Committee's awards to novelties consisted only of one First-class Certificate and three Awards of Merit.

The FLORAL COMMITTEE, however, had a large number of groups to examine, and among these were large displays of Annuals, Gladioli, and miscellaneous species of hardy flowers. One extensive group of Gladioli had come all the way from Paris, from the nurseries of Messrs. VILMORIN, ANDRIEUX ET CIE.

Dahlias have made their appearance, and may be expected in considerable numbers at the next meeting, and even the Chrysanthemum specialists have again commenced to exhibit their particular favourites; but they can hardly hope for much attention whilst the more brightly coloured Dahlias are plentiful. Roses helped to strengthen the cut flower section, and a large group of Caladiums in pots was the most important of the plants exhibited. The Floral Committee recommended the awards of one First-class Certificate and five Awards of Merit, three of the latter being for varieties of Gladioli.

Before the FRUIT and VEGETABLE COMMITTEE there was staged a superb exhibit of Grapes from the Duke of WELINGTON'S garden, that well merited the Gold Medal recommended by this Committee. We doubt if finer and better finished specimens have ever been seen in this Hall. There were also collections of fruit or fruit-trees in pots from Lord WANTAGE, Messrs. G. BUNYARD & Co., Maidstone; and Messrs. S. SPOONER & Sons, Hounslow; Messrs. J. LAING & Sons, and Messrs. JAS. VEITCH & Sons. Dr. Bonavia's Aubergines and Marrows were interesting. The only award recommended to a novelty was that of an Award of Merit to the new autumnal fruiting Strawberry St. Antoine de Padoue, figured in the *Gardeners' Chronicle*, July 28, p. 67, and shown on this occasion by Sir TREVOR LAWRENCE.

The LECTURE in the afternoon was one by M. LEMOINE upon "Montbretias and Crocosmias."

Floral Committee.

Present: Geo. Paul (in the Chair), H. Turner, Maurice L. de Vilmorin, Jules Margottin, Geo. Nicholson, C. T. Drury, H. B. May, W. Howe, J. Hudson, C. J. Salter, C. R. Fielder, J. D. Pawle, W. Bain, C. E. Pearson, J. Walker, Geo. Gordon, and W. J. James.

Caladiums were shown by Messrs. J. FEED & Sons, West Norwood, London, S.E. They had an excellent group of moderate-sized plants in pots, all of them appearing as fresh and well coloured as one sees them in June. Conspicuous among them were such varieties as Madame Mitjana, with

vinous-red coloured leaves; Lady Mosley, the well known Louis Van Houtte, Baron Adolphe de Rothschild, Ibis Rose, Her Majesty, a yellow-leaved variety shown in beautiful colour; Rio de Janeiro, one of the very prettiest, pink with green margins, &c. (Silver Banksian Medal).

Annuals were displayed grandly and in very large quantity by Messrs. H. CANNELL & Sons, Swanley, Kent. Sweet Peas were represented in a dozen choice varieties, then was placed the pretty Linaria, known as *L. reticulata aurea purpurea*. Some of the earlier flowering China Asters were shown, and Calliopsis Atkinsoniana, and Dianthus Hedderwigii, in single and double forms. Drummond's Phlox was represented by a number of varieties of very pretty colours, including rose, scarlet, purple, lilac, white, carmine, yellow, blue, and deep crimson. There were also striped varieties, and others with fimbriated blossoms. Helianthus Stella and H. cucumerifolius were well shown, and the pretty mauve-coloured Brachycome iberidifolia, Marigolds Legion of Honour, African Orange, and other varieties, also made a considerable show. Most of these Annuals were not cut flowers, but consisted of whole plants simply pulled up and inserted in the vases (Silver Banksian Medal).

Messrs. JAS. VEITCH & Sons, Royal Exotic Nursery, King's Road, Chelsea, exhibited a group of plants in bloom, of their Rhododendron Javanico jasmiflorum hybrids, which made an extremely pretty exhibit, far excelling in beauty the col-



FIG. 50.—CROCOSMIA ACUTA. (SEE P. 177.)

lections of cut blooms which have been shown. This firm had also some very choice annuals, as Candytuft Hybrid Rose, Hunnemannia fumarifolia, with large single yellow Papaver-like flowers; Verbena hybrida, Gaillardia picta salmonæa, with deep brownish-red flowers; Calliopsis Tom Thumb, Clarkia pulchella, fl.-pl., &c. (Silver Banksian Medal).

Mr. THOS. S. WARE, Ltd., Hale Farm Nurseries, Tottenham, showed a very fine group of hardy flowers, in which the shrubby Phloxes were represented in numerous and excellent varieties in regard to size and colour of flowers; Independence, Albatre, and Fiancée, white; Girardin, Aurora, carmine; The Mahdi, purple, coccinea, scarlet; Leonarda de Vince, white, with reddish centre; and Caran d'Ache, were some of the more noticeable. Several varieties of Gladioli of the Lemoinei and Nanceanus sections were very rich in colour; and there were fine bunches of Lilium auratum, &c. (Silver Banksian Medal).

Messrs. GEO. JACKMAN & SON, Woking, showed a rose-coloured variety of Lobelia syphilitica and Lychnis grandiflora, a plant with single red-coloured flowers nearly 2 inches across.

Mr. M. PRICHARD, nurseryman, Christchurch, Hants, had a good exhibit of hardy herbaceous perennials as cut blooms, very showy, such as Phlox, Helianthus, Kniphofia, Elgeron, the seldom seen Phytolacca capensis, the handsome Rudbeckia speciosa, Montbretia pyramidalis, and M. Rayon d'Or, Lobelia cardinalis in variety, Gypsophila repens monstrosum (Award of Merit). Liliums in variety, Veronica subsessilis, with a long spike of deep blue flowers; Crinum Powelli Aster, Anemone japonica, &c. (Silver Banksian Medal).

Messrs. BARR & SON, King Street, Covent Garden, showed extensively cut flowers of hardy herbaceous perennials, bulbs, &c. We remarked Veronica longifolia subsessilis, a quantity of varieties of very pretty Pentstemon, Lilium auratum rubro-vittatum, Cactus Dahlias, Kniphofias, a lot of the varieties of shrubby Phloxes, including such fine ones as coccinea, Pantheon, Lothair, Eden, Adonis, Champignon, Aurora Borealis, and Flambeau; Helianthus multiflorus in variety, Gladiolus, and varieties of Marliac's and other Water Lilies, showing them in pans filled with water (Silver Banksian Medal).

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, exhibited Antholyza species, a strong-growing plant several feet high, with reddish flowers having a yellow centre.

Lilium Leichtlini, a species with yellow flowers spotted purple, and L. Thunbergianum var. Wilsoni, were shown by Messrs. WALLACE & Co., Kilnfield Gardens, Colchester; both these Lilies are very pretty.

The Calvary Cleeve (Medicago echinus), was shown by JOHN MACKRELL, Esq., High Trees, Clapham Common (G.C., Mr. H. DAVIS). The plant was bearing flowers and seed pods, and one of the latter was shown opened, in order to demonstrate its resemblance to a crown of thorns.

Messrs. WILLS & SEAGAR, 16, Onslow Crescent, South Kensington, exhibited a fine plant of Ananassa sativa variegata with a fruit upon it.

W. WELLS & Co., Ltd., Earlswood Nurseries, Redhill, showed a group of sports of early-flowering Chrysanthemums. Victor Maw is a white sport from Madame Desgranges; a bronze sport from Madame Marie, Massee is an apparently desirable flower; a yellow sport from Queen of the Earlys, possessing florets which incurve more than do those of the type, the tint, a curious yellow, is also a good thing; Miss Ruth, a yellow sport from Mrs. Hawkins, in which the colour is a little deeper and the florets are reflexed, is nice. Various other Chrysanthemums were shown.

A group of Chrysanthemums in pots, showing varieties of M. C. Desgranges and others, was shown by Messrs. JNO. LAING & Sons, Forest Hill Nurseries, London, S.E.

GLADIOLUS.

Sir TREVOR LAWRENCE, Bt., showed nearly three dozen varieties of Gladiolus, all of which were superb examples with large bold flowers of exceeding rich colours. One of these will be found noticed under "Awards" (Silver Banksian Medal).

Messrs. KELWAY & SON, Langport Nurseries, Somersetshire, had a glorious exhibit of Gladioli embracing about 130 spikes of blooms. Among the many varieties of excellent merit we may mention the following: Sir Chas. Warren, rosy purple, very large; Devonshire Cream, cream-coloured, with a few reddish stripes; Sir William Hart, flesh colour, with deep blotches on the lower petals, very fine; and Lady Macdonald, pink, with a little yellow on the lower petal (Silver gilt Banksian Medal).

MM. VILMORIN-ANDRIEUX ET CIE, 4, Quai de la Mégisserie, Paris, showed a very extensive collection of Gladioli in unending variety of colouring. The collection might have been severely weeded of inferior varieties with advantage to the whole. There were, however, many of great beauty, and remarkable colour, differing somewhat from what we see in those raised in this country. There were a few of G. Nanceanus, and the Maculé or spotted strain, the colouring and forms of which are so different to the Gandavensis section of Gladiolus. Cultivators of this fine race of border plants will be glad to know that G. Nanceanus and G. N. maculé are hardy in this country. Among the varieties shown were Jules Finger, a fine spike of large crimson flowers having a spotted throat; Marie Galesloot, yellow, paling off towards the edges of the perianth, and furnished with a patch of crimson in the throat; of Gandavensis varieties, four of an intensely dark crimson were noted, viz., Deuil de M. Carnot, Octave Miran, M. Leveque, and Abbé Roncourt. Van Dail in a fine cerise, paler towards the centre; Tristan is of a dull red, with a white patch on the lower segment; Princess May de Teck is of palest flesh tint, splashed with rose; Bacchante is crimson, flaked with a deeper tint of crimson; Romeo has lilac-tinted flowers of a small size; Helle is of a pale flesh tint a little deeper at the margins, and is a big flower; Magenta, in colour corresponding with its name, is showy and satisfactory; Fantasie and Harlequin are flaked flowers, the one with a white ground, the other a buff, both novel in regard to colour; Carmen is of a pale lemon-yellow with the faintest flush of rose, and is a flower that will please many; as also Osmanli, a bright, yet soft tint of scarlet. The above are but a few of the good things shown by the eminent Paris firm (Silver-gilt Flora Medal).

DAHLIAS.

Mr. C. TURNER, Royal Nurseries, Slough, showed several seedling Dahlias, including Vara, a pretty yellow Pompon; Galatea, crimson - purple Pompon. Also Cactus Dahlias Leander, light red colour; Thalia, bright crimson; and Ladas, yellow.

Mr. G. S. PIERRE HARRIS, Orpington, Kent, showed seedling Dahlias Viceroy and Peeres, the latter yellow, and the former yellow with slight crimson margins.

Messrs. B. S. WILLIAMS & SON, Victoria and Paradise Nurseries, Upper Holloway, showed blooms of a decorative Dahlia named Snowflake, apparently a good white variety for the purpose.

Messrs. J. CHEAL & Sons, Lowfield Nurseries, Crawley, had the following Cactus Dahlias: Mrs. Cosmo Benson, cherry-red; Cheal's Golden Queen, and Mrs. Arbuthnot, the last-named being rather pale yellow with claw-like petals.

ROSES.

Messrs. PAUL & SON, the "Old" Nurseries, Cheshunt, had an exhibit consisting of a quantity of *Cyclamen nederfolia* album, and the type form of the plant, and of Tea Roses. They showed *Gustave Regis*, *Madame de Watteville*, *Madame Falcot*, *Celine Forrester*, *Maman Cochet*, *Camoens*, and *Souvenir de President Carnot*, *Madame Cadeau Ramy*, *Marie Van Houtte*, *Mrs. J. W. Grant*, *Marquis of Salisbury*, were well developed for late blooms (Silver Banksian Medal).

Messrs. FRANK CANT & Co., nurserymen, Braiswick, Colchester, showed Roses rather extensively, many of them marked as being good bedders and climbers. Of the former we may specify *Killarney*, *Camoens*, *Marie Pavie*, *Kaiserin Augusta Victoria*, *Queen Mab*, *Stanwell Perpetual*, *Madame J. Gielez*, bright rose-pink; *Caroline Testout*, *Gustave Regis*, *Rainbow*, *Maman Cochet*, *Clara Watson*, and *Ferdinand Batel*. The climbers were *Grüssan Tepitz*, *Papillon*, *Madame P. Cochet*, *Bardon Job*, and *Longworth Rambler* (Silver Banksian Medal).

Awards.

Gladiolus Jules Toussaint.—A magnificent variety, with large flowers of purple and silver colour, and the lower segments very heavily blotched with rich purple. From Sir Trevor Lawrence (Award of Merit).

Gladiolus Ocean.—A light purplish-blue variety, marked with very deep crimson in the throat, and several blotches of pale cream colour. From Sir Trevor Lawrence (Award of Merit).

Gladiolus Sir Evelyn Wood.—A grand variety, with large flowers of rich bright crimson colour. From Messrs. KELWAY & SON, Langport (Award of Merit).

Glyceria aquatica foliis variegatis.—A good decorative hardy Grass, with variegated foliage, the leaves of which are not unlike those of *Dactylis*, but the growths are much stronger, and about 2 feet high. From Messrs. PAUL & SON, Old Nurseries, Cheshunt (Award of Merit).

Gypsophila repens monstrosum.—A very decided variation from the type, and possibly a hybrid. The plant is three or four times as large as *G. repens*, and has big panicles of white flowers. It does not seed, we are told, and has continued to flower ever since June. From Mr. MAURICE FRITCHARD, Christchurch (Award of Merit).

Platycodon grandiflorum semi-duplex.—This is a valuable variety of the well-known *Platycodon grandiflorum*, with semi-double flowers, 2 inches or more across. From Sir Trevor Lawrence, Bt., Burford (First-class Certificate).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), A. H. Smee, J. Gurney Fowler, E. Hill, H. A. Tracy, H. J. Chapman, F. Sander, H. Little, W. H. Young, H. M. Pollett, F. J. Thorne, and de B. Crawshay.

Again, as at the last meeting, but few exhibits were staged. W. W. ASTOR, Esq., Cliveden, Maidenhead (gr., Mr. H. Bacon), showed a gigantic and splendidly-grown specimen of *Peristeria elata* (Dove Orchid), with eight fine spikes of its wax-like, fragrant white flowers (Cultural Commendation).

Captain HOLFORD, Westonbirt, Tetbury (gr., Mr. A. Chapman), again showed his fine *Cypripedium* × *Milo*, "Westonbirt variety," which had previously been given an Award of Merit. The flower had much improved since it was last shown. The upper sepal is white with blackish dotted lines, changing to purple at the margin; the petals and lip, shining mahogany-red. Capt. HOLFORD also showed three handsome spikes of *Dendrobium Phalaenopsis* with from eighteen to twenty-two flowers open on each (Cultural Commendation); a very large *Dendrobium formosum giganteum*; a bright yellow *Sobralia xantholeuca*; and a distinct form of *Odontoglossum* × *Adriana*.

Mr. ED. KROMER, Bandon Hill, West Croydon, showed a flower of *Cattleya aurea Jenseniana*, very large in size and fine in form. The sepals and petals primrose-yellow with purple freckling at the tips of the petals. The lip claret-purple with fine gold veining.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr., Mr. J. Davis), showed *Lælio-Cattleya* × *Schilleriana* "Glebelands variety," with well formed white flowers tinged with lilac, the front of the lip bright purple, with a narrow lavender-coloured margin.

Sir WM. MARRIOTT, Down House, Blandford (gr., Mr. Denny), sent *Cattleya* × *Armanvilliersiana* (C. Mendel × C. Warszewiczii), the flower of which closely resembles some of the forms of *Lælia purpurata*. The sepals and petals white, with a pale lilac tinge. The front of lip and edges of the side lobes of a purple tint.

Messrs. HUGH LOW & Co., Bush Hill Park, showed *Cattleya Eldorado splendens*, and another form with bluish-white flowers; two varieties of *Lælio-Cattleya* × *elegans*; and a good specimen of *Cynochloa chlorochilon*.

Awards.

Cattleya × *illuminata* (parentage unrecorded), from Mrs. BRIGGS-BURY, Bank House, Accrington (gr., Mr. Wilkinson), a brilliant hybrid of the general appearance of C. × *Atalanta* (Leopoldi × Warszewiczii). The sepals honey-yellow, with a slight tinge of rose colour; petals broader, and similarly coloured, with the addition of a delicate purple veining. The lip having the side-lobes folded over the column, bluish-pink; their erect tips ruby-crimson; the broadly-expanded, crimped front blade being also glowing ruby-crimson (First-class Certificate).

Odontoglossum × *Adrianus Countess of Morley*, from Captain HOLFORD, Westonbirt, Tetbury (gr., Mr. A. Chapman). A finely formed cream-white flower, the sepals of which are decorated with large chocolate-coloured blotches, the petals

bearing fewer blotches of the same colour, and the fimbriated lip one large and some smaller purplish-brown spots (Award of Merit).

Lælio-Cattleya × *elegans*, J. Davis, from Mr. H. A. TRACY, Amyand Park Road, Twickenham. A very large and peculiarly-formed flower. The sepals and petals of pale rosy lilac; lip-tube white, and the broad front-lobe of a bright carmine-purple (Award of Merit).

Cattleya bicolor, from WALTER C. WALKER, Esq., Winchmore Hill (gr., Mr. Geo. Cragg). The plant was shown as the type of the species. The stems are tall and slender; flowers greenish, with rose-purple front to the lip (Award of Merit).

Fruit and Vegetable Committee.

Present: Philip Crowley, Esq., Chairman; and Messrs. Jos. Cheal, E. Shaw Blaker, H. Eslings, A. Dean, Geo. Kelf, W. Bates, F. Q. Lane, Geo. Norman, Geo. Bunyard, and W. Poupert.

Kerr's Black Hambro Grape was shown from the Society's garden at Chiswick, by Mr. S. T. WRIGHT, the Superintendent, along with fruits of the ordinary variety of Black Hambro. Kerr's variety is thought by some of the members of the Committee to ripen a little earlier, and so far as the specimens shown are concerned, these appeared to confirm this idea.

An extraordinary exhibit of fruit was made by the Duke of WELLINGTON, Strathfieldsaye, Mortimer, Berks, and its

Duchess Favourite, &c. Also a few early Pears, and half-a-dozen dishes of Plums.

Messrs. GEO. BUNYARD & Co., Maidstone, exhibited some capital Apples, each variety being represented by a large number of fruits. There were Lord Suffield, Emperor Napoleon, The Queen, Ecklinville Seedling, Duchess of Oldenburgh, Beauty of Bath, James Welch, Duchess Favourite, Worcester Pearmain, Grenadier, Lady Sudeley, Williams' Favourite, Red Astrachan, Red Quarrenden, Golden Spire, Gold Medal, &c. There were also some early Pears, as Williams' Bon Chrétien, Petite Marguerite, Dr. Jules Guyot, Doyenné Bussocb, Madame Treve, &c. (Silver Knightian, Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, showed excellent fruits of Early Rivers and Précoce de Cronels Nectarines from young trained trees in the nursery, showing how freely such fruits have cropped this season. Also Veitch's hybrid Bean from a Scarlet Runner × Dwarf French, and Langley Pippin Apple, which was recommended an Award of Merit on August 23, 1898. Messrs. VEITCH also showed a number of well-fruited Tomato-plants in pots, the variety being Chiswick Peach. It appears remarkable as a heavy cropper, and the fruit is of a light yellow colour, and comes in clusters of five to seven. The plants were from 5 to 6 feet in height, and loaded with fruits from the bottom to the top (Cultural Commendation).

Mr. CHAS. TURNER, of the Royal Nurseries, Slough, showed

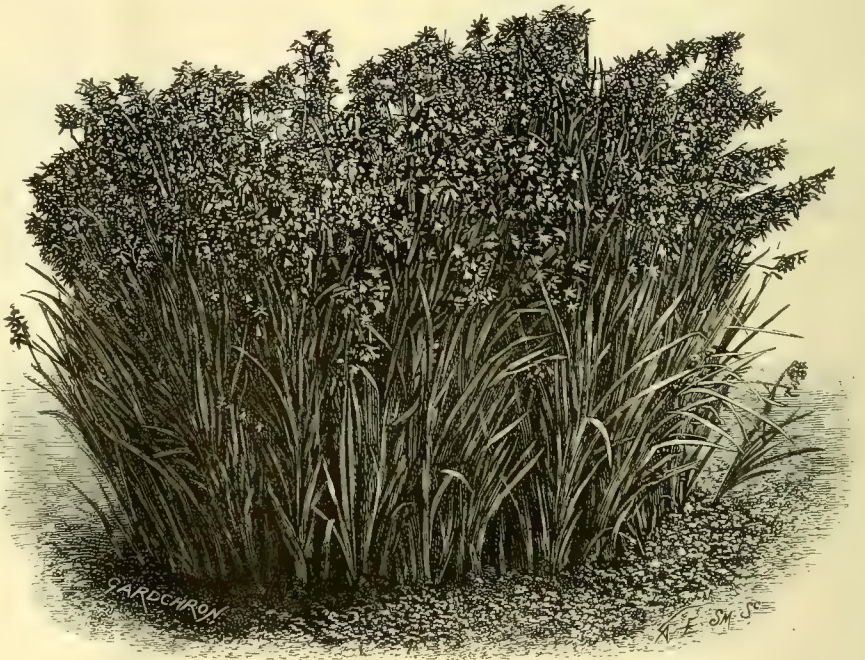


FIG. 51.—CROCOSMIA AUREA AS GROWN IN THE HYDE PARK, SYDNEY.

(SEE P. 177.)

merits from a cultural point of view was acknowledged by the award of the Society's Gold Medal. The Grapes were magnificent, and of the best quality, and large size. There were eight varieties of these, and all were excellent, but those of Madresfield Court (three bunches) were uncommonly pretty specimens, and of heavy weight. The Black Hambro bunches were hardly less pretty, and from the point of view of size were just as remarkable. So was a huge bunch of Golden Hambro, capitally coloured. Gros Maroc was represented by five splendid bunches; Muscat of Alexandria by two bunches, Raisin de Calabrie by two large bunches, and Alouwick Seedling by three. Altogether there were twenty-two bunches of Grapes. There were also eight dishes of Peaches in as many varieties, five dishes of Nectarines, three of Plums, two of Figs, three of Apples, eight Melons, &c.

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., showed some well cropped fruit-trees in pots. Most of them were Peaches and Nectarines grown in an orchard-house. These and another, which was trained fan-shaped, bore a large number of fruits. The fan-shaped specimen was of the variety Dr. Hogg, and was more heavily cropped than any. There were about twenty-five dishes of Apples, and two plants of the Grape-Tomato in fruit (Silver Banksian Medal).

Dr. BONAVIA, Westwood, Worthing, showed Aubergine Violette Ronde, having round purple fruits; also an early long-fruited purple variety, and an early dwarf (Violette naïve très Hâtive), which begins to flower and set fruits when a few inches only in height (Cultural Commendation).

Marrows from the same exhibitor and about 4 inches long, were described as of excellent flavour (Vote of Thanks).

Messrs. S. SPOONER & SONS, Hounslow Nurseries, Middlesex, had a selection of fruit in about forty dishes, and consisting for the most part of the earlier ripening Apples, some of which were shown very well, as Gladstone, Worcester Pearmain,

a young trained tree of Nectarine Early Rivers lifted from the open nursery, and with abundant fruits upon it. Also a quantity of fine ripe, or nearly ripe fruits of the same variety gathered from similar trees. It is rare for young Peaches to fruit so freely in such conditions.

Several seedling Apples were shown by exhibitors, but no award was gained by them.

Mr. FIFE, gr. to Lord WANTAGE, Lockinge Park, Wantage, showed a large collection of excellent fruit. The Grapes consisted of Madresfield Court and Muscat of Alexandria; Peaches, Barrington, Crimson Galande, and Grosse Mignonne; Apples, Lady Sudeley, Irish Peach, and Miller's Seedling; the Plums, capital examples, more especially so—Heale's Hybrid, Washington, Imperial Ottoman, a small, oval, yellow, dessert variety; Kirke's Green Gage, Jefferson, Royal de Tours, Denyer's Victoria, and Guthrie's Late Gage; Cherries, Figs, and Melons, were also shown (Silver-gilt Knightian Medal).

Sir TREVOR LAWRENCE, Bart., Burford, Dorking (gr., Mr. Bain), showed a fruiting spray of Dolichos Lablab, a variety with very ornamental, deep purple pods. These leguminous plants are cultivated for kitchen use in warmer climates than ours, but in England they have been grown in warm or intermediate houses for ornamentation.

Messrs. PAUL & SON, Cheshunt, exhibited three bunches of their Grape, Lady Hastings (F.C.C., R.H.S.). The bunches were of small size but perfect, the colour jet black, and the bloom dense.

Awards.

Strawberry St. Antoine de Padoue.—A new variety of the autumnal-fruited section, figured in the *Gardeners' Chronicle*, July 28, p. 67. It is described as a vigorous, compact grower, and the fruit is larger than any of this section favour good. From Sir Trevor Lawrence, Bart., Burford (Award of Merit).

Lecture.

"MONTBRETIAS AND CROCOSMIAS."

A paper by M. EMILE LEMOINE upon "Montbretias and Crocosmias" was read by Mr. Harry J. Veitch, M. Lemoine being unable to be present. M. Lemoine commenced his paper by referring to the decorative character of the Montbretias, and their suitability for cultivation in flower borders out-of-doors. The hybrid Montbretias, said M. Lemoine, were exceedingly interesting, because the type plant, *M. crocosmiflora*, was not only a hybrid, but one of the few bigeneric hybrids (*Crocossia aurea* X *Montbretia Pottsii*). Yet it had produced a strain of vigorous and fertile plants. It had been found possible to cross-breed with these, and considerable variation and improvement had already been obtained by himself and other cultivators. It was more than fifty years since *Kniphofia aurea* was introduced, and it was subsequently named *Tritonia aurea*, and later *Crocossia aurea* (see figs. 50 & 51). It is now a well-known plant, producing large orange-coloured flowers upon strong racemes. The new corms are produced upon stolons; and the soil in which these plants are cultivated should be rather light in character.



FIG. 52.—CROCOSMIA AUREA MACULATA.

The other parent of the hybrid Montbretias, *M. Pottsii*, has only been known to English gardens for about twenty-five years, but although it is much less beautiful than the *Crocossia*, it very rapidly became popular in gardens, because it produced more though smaller flowers, was hardier and more vigorous, and could be propagated rapidly.

In 1882, *Montbretia Crocosmæflora* was raised by Crozy, and it was soon admitted to be a very fine plant, possessing considerable vigour, and being somewhat easy to cultivate. It may now be seen in almost all gardens on the continent. M. Lemoine then gave a chronological list of varieties that he had sent out from his own nursery until 1892, when he was able to use two other plants in place of the old *Crocossia aurea*. One of these was *C. aurea maculata* (see fig. 52), introduced through the agency of Mr. James O'Brien from South Africa, and described by Mr. J. G. Baker in *Gard. Chron.*, Oct. 13, 1888, p. 407. The flowers of this variety are very handsome, they are orange-red in colour, and the three inner segments have a blotch of red-brown at the top of the conclave claw. Up to these blotches the perianth segments are rather stalked and incurved. The plant grows to a height of 3 or 4 feet. The second plant was one that Mr. Max Leichtlin introduced to gardens, and is known by the name of *C. aurea imperialis*. This is a giant form of the type, being stronger in habit and larger in its proportions.

These two new varieties of *Crocossia aurea* were then

crossed with the hybrid Montbretias, and M. Lemoine gave another chronological list of varieties he has raised subsequently to the year 1892. There would have been more varieties available, but a disease had attacked many of the seedlings, and these were destroyed, as it was not desirable to introduce to commerce those that would be likely to suffer from disease.

In respect to the cultivation of Montbretias, M. Lemoine said that the dry corms might be planted in March or April, or preferably they may be started a little earlier in frames, and removed out of doors subsequently. The flowering season commences in July and extends to September. In many gardens on the continent the corms are left out during the winter, and the ground covered with a layer of tree-leaves, but at M. Lemoine's establishment they prefer to lift and store them in sand, or some other suitable material.

A few explanatory remarks were made respecting the disease. Whilst the plants are growing vigorously, a few leaves are seen to wither suddenly, and then the flower-stem is attacked. When the corm is cut through, it is seen that the wood-fibres have become blackened. The only thing to be done was to burn them. Good results would be obtained from dipping the corms occasionally during the winter in a quantity of Bouille Bordelaise.

Groups and Plants.—These formed the leading features, and the Challenge Cup given by the honorary Secretary was won by Mr. H. A. BLYTH. His group was prettily arranged with flowering and foliated plants, and had the corners and centres raised, and furnished with grasses. Sir JAS. BLYTH, Bart., was 2nd, with a very good group, but in which *Caladiums* were too numerous. C. GOLD, M.P., was 3rd.

Stove and Greenhouse Plants.—The competition in this class was not good, nor were the plants creditable to the cultivators. Mrs. MERRET showed the better flowering plants; Mr. H. A. BLYTH and Mr. C. GOLD the finest foliage plants.

Peas.—Here Messrs. BUCKMASTER and BARKER took the leading prizes.

Caladiums in collections were good, and Mr. W. P. NEAL won. Tuberous-rooted *Begonias* in double and single-flowered varieties were well shown; Messrs. W. SMITH and TAYLOR taking 1st and 2nd prizes in the order of their names.

Other competitions that were keenly contested were those for *Pelargoniums*, *Gloxinias*, and *Coleus*, which made, as a whole, a splendid show; the prizes in most cases going to exhibitors whose names are given above.

Cut Flowers and Table Decorations.—One large tent was set apart for these exhibits, no fewer than twenty-nine ladies competing in table decorations with effects that were very elegant and pleasing. The lady judge, Miss Philbrick, had much difficulty in making her awards, so nearly equal in merit were the exhibits. Decorated mantel-boards formed another set of exhibits sent by ladies; and baskets of cut flowers, bouquets, sprays, and vases, made a fine display. At this show there were children's classes, and some pretty arrangements were remarked in the way of flower-vases and button-holes, bouquets and baskets.

Sweet Peas were a good class by themselves, and those shown for Mr. Eckford's prizes contained choice varieties. Mrs. MERRET and Mr. J. BARKER taking the awards in the order of their names.

Hardy Herbaceous Perennials as cut flowers were less numerous than formerly, the rough weather being answerable for this falling off, Messrs. WATTS, BARKER, and GOLD being the more successful competitors. *Chrysanthemums* were largely shown, but this date is full early for these flowers, and Madame Desgranges was the variety mostly staged. There was a strong competition in most classes in this division.

Fruit.—The collections of Grapes and Peaches were remarkable for good quality. Mr. J. BARKER was a good 1st for eight dishes distinct; his Grapes and Peaches were very fine. J. BAILEY, M.P., was a close 2nd. For four varieties, Sir J. BLYTH, Bt., Mr. BARKER, and Col. ARCHER HOUBLOU, were 1st, 2nd, and 3rd in the order given. Of Grapes Mr. BARKER had the best bunches of Black Hamburgs; and Mrs. MERRET and Mrs. STREET were 2nd and 3rd. For any other black variety, Mr. J. BARKER and Sir J. BLYTH were 1st and 2nd. With Muscat of Alexandria, Messrs. GOSLING and BARKER 1st and 2nd. Melons were but a poor show; Peaches were good here, Messrs. BARKER, HOUBLOU, and HOLLAND were the winners. The Nectarine Awards going to Messrs. BAILEY and BARKER in order named.

Excellent vegetables were shown in great quantities, and for eighteen distinct kinds, Mr. J. BARKER was 1st, and Mrs. TAYLOR 2nd; for nine dishes Mr. F. CALVERT and Mr. GEE were 1st and 2nd. G. W.

TAUNTON DEANE HORTICULTURAL.

AUGUST 16.—A splendid show was the general verdict, and it was quite true, for some of the features were truly magnificent. It is doubtful if even Mr. JAMES CYPHER, of Cheltenham, ever before staged twelve finer plants than those he put up in Class 1 at the thirty-third show of this Society; they were indeed the admiration of all who saw them. They consisted of a magnificent *Phenocoma prolifera* Barnesii, fully 6 feet through, grandly bloomed, and finely coloured; *Statice profusa* and *S. intermedia*, *Ericas* *Marnockiana*, *Irbyana*, and *Aitoniana*; *Allamanda nobilis*, *Rondeletia speciosa* major, *Bougainvillea Cypheri*, and two others. Mr. W. FINCH, Coventry, was 2nd; he had two good specimens of *Erica Marnockiana*, *E. Aitoniana*, *E. Irbyana*, *Bougainvillea Sanderiana* (2), &c. 3rd, Mr. Rowland, gr. to W. BROCK, Esq., Exeter.

With six plants, Mr. J. CYPHER was again 1st, having *Erica æmula*, very fine; *E. retorta* major, another fine *Statice profusa*, *Bougainvillea Cypheri*, *Phenocoma*, and *Rondeletia*. Mr. W. VAUSE, of Leamington, was 2nd, also with some good specimens, including well developed *Ericas*.

In the amateurs' division, some very fine examples of superior cultivation were staged by Mr. W. Thomas, gr. to W. G. MARSHALL, Esq., Taunton, who showed *Isora Williamsii*, a large *Epidendrum prismatocarpum*, *Dipladenia insignis*, *D. Brearleyana*, *Stephanotis floribunda*, and foliage plants being admissible, some fine *Codadiums*. Mr. W. BROCK was 2nd, he also staging good specimens.

It is usual at Taunton to have classes for certain specimen plants; the best greenhouse plant was a fine piece of *Erica Marnockiana*, from Mr. CYPHER; the best stove plant, a very fine example of *Acalypha hispida* (Sanderiana), from Mr. W. G. MARSHALL, superbly grown, and covered with its long cord-like inflorescences; and the others do not call for special notice.

As a cultivator of tuberous-rooted *Begonias*, Mr. W. G. MARSHALL's gardener ranks high, and he produced eight highly developed specimens in the class for that number, large and freely bloomed; the Rev. D. J. PRING, Taunton, a well known local grower, was a good 2nd. In the amateurs' division for six single varieties, Mr. W. G. MARSHALL was 1st; and in that for double, the Rev. J. D. PRING was 1st—it is

BISHOP'S STORTFORD HORTICULTURAL.

AUGUST 15.—The thirty-first annual show of this Society was held on the above date, at The Grange, the residence of John Barker, Esq., a great supporter of the Society. Few provincial exhibitions equal it in the number of the entries and in the goodness of the arrangements, as not only is there a flower show but other attractions for those to whom gardening does not appeal very strongly. The secretary is Mr. J. Smith, who has served the Society well for many years.

doubtful if any better specimens of Begonias are to be found than those shown at Taunton.

Zonal Pelargoniums are not now so well done at Taunton as formerly; the best specimens were in the amateur's division, Mr. C. HARMAN and Miss NEAL taking the leading prizes. Cockscombs still find a place, and good specimens were shown in both divisions. Lilies in pots, comprising *L. auratum* and the varieties of *L. speciosum*, were well shown by Mr. W. G. MARSHALL and Mr. W. M. SMITH; Fuchsias were creditable, but poor in comparison with what is found at Trowbridge. Gloxinias were very good; and we always find at Taunton some of the best specimen Achimenes to be found about the country; while Petunias and Balsams have their admirers, and are still produced in the form of well-grown and bloomed specimens.

Fine Foliaged Plants were a remarkable feature; the two collections of eight staged by Mr. CYPHER and Mr. FINCH were of colossal proportions and superb colours. The former was 1st with a majestic *Phoenix rupicola*, *Kentia Forsteriana* and *Belmoreana*, *Latania borbonica*, all of large size; and four splendid *Codiaeums*, viz., *Cheloni*, *Queen Victoria* (like a huge cone of fire), *angustifolium*, and the yellow-leaved *Coun-ness*. Mr. FINCH had some grand *Kentias* and a *Codiaeum Queen Victoria* that would excite the admiration of Mr. CYPHER. He also had a fine piece of *Cycas revoluta*.

In the amateurs' division Mr. BROCK was the leading exhibitor of foliaged plants. An omission of any mention of the six stove and greenhouse plants staged by Mr. W. G. MARSHALL may be rectified by stating that they were not only very fine, but they included superb examples of *Ataccia cristata* and *Dipladenia Brearleyana*; Mr. BROCK was 2nd.

Ferns were shown in both divisions. The most successful exhibitor was Mr. E. Merrett, gr. to H. S. BAILY, Esq., Glastonbury, who was 1st with well-grown specimens in both classes; Mr. W. BROCK was 2nd.

Mr. J. CYPHER was the only exhibitor of four Orchids, which well deserved the 1st prize; chief among them being *Odontoglossum Phalenopsis* var. *Schroederiana*, and *Epidendrum vitellinum majus*.

Groups of plants are an improving feature at Taunton; for since Mr. Cypher has taken the field in the West, new ideas in arrangement have taken root. In the open class, Messrs. CYPHER and FINCH had fine groups. In the amateurs' division, Messrs. BROCK and BAILY were respectively 1st and 2nd.

Cut Flowers.—Some falling off was decidedly perceptible here. Roses were small, owing to the hot weather; the best thirty-six varieties came from Messrs. G. TOWN-SEND & SON, of Worcester, who had Baron Bonsetten, Mrs. J. Laing, Mrs. Laxton, J. S. Mill, Maman Cochet, A. K. Williams, Innocente Pirola, Comtesse de Nadaillac, &c.; Mr. A. A. WALTERS was 2nd. Messrs. TOWNSEND & SON were 1st with eighteen varieties, and also with eighteen Tea Roses, chief among the latter were *The Bride*, *Maman Cochet*, *Madame Cusin*, *Elise Finger*, *Bridesmaid*, and *Niphetos*. In the amateur's division Mr. THOMAS HOBBS, of Bristol, showed good flowers.

Dahlias, generally a leading feature at Taunton, were below the mark, it being yet too early by a fortnight for them. Messrs. G. CRAY & SON, Frome, had the best show of Pompon and Cactus varieties.

Phloxes were in good character from Messrs. NEAL.

Asters were represented by well finished quilled varieties, from Mr. A. A. WALTERS; Mr. S. DOBREE had the best Peony-flowered, a type which deserves to be more widely grown; the Rev. J. D. PRING had the best of the Comet type. Mr. S. DOBREE was the leading exhibitor of Gladiolus.

Phlox Drummondii has quite taken the place of the Verbena in the West of England, and they are much more attractive. They were finely shown by the Rev. J. D. PRING and others; and the latter was 1st in both classes with very fine single and double-flowered Begonias.

Hardy perennials as cut flowers set up in bold bunches were a fine feature from Mr. A. A. WALTERS; and Mr. Robert Sydenham's special prizes for Sweet Peas brought a large and interesting competition.

The tent devoted to table decorations is always an attractive one here. The best dinner-table arrangement, out of five, came from Mr. J. CYPHER, which was charmingly done with small flowered Orchids; and Messrs. E. S. COLE & SONS, Bath, were 2nd. There were bouquets, baskets, and other floral arrangements.

Fruit was in general good character, and in some of the classes the competition was very close. The best collection of eight dishes was from Mr. J. LLOYD, gr. to VINCENT STUCKEY, Esq., Langport, who had Muscat of Alexandria and Madresfield Court Grapes, Hale's Early Peaches, Pine-apple Nectarines, Belle Magnifique Cherries, Oulins Golden Gage Plum, Figs, and a Melon; and Mr. W. A. SANDFORD was a good 2nd.

With four dishes the FROME FLOWER AND FRUIT COMPANY came 1st with a good collection. Fine Apples and Grapes were shown in four classes. Peaches, Apricots, Nectarines, Pears, Apples, and small fruits were also shown.

Vegetables were abundant, and very good; it was said to be one of the finest displays of vegetables ever seen in Taunton, and it is certain that the soil of the district grows them to great perfection. The cottagers made an excellent display. There were many collections and single dishes of all the leading kinds in the finest character.

Miscellaneous collections were sent by Messrs. R. J. VEITCH & SONS, of the Exeter nurseries, and included blooms of *Mariae's Water Lilies*; Messrs. KELWAY & SON had a superb collection of Gladiolus; Mr. J. H. WHITE, of Worcester, had hardy flowers; and local nurserymen also made interesting contributions.

BRIGHTON AND SUSSEX HORTICULTURAL.

AUGUST 23, 20.—With leaden skies overhead, and much gloom in the atmosphere, the ninth annual exhibition of this Society was held, partly in the Corn Exchange, partly under the Dome, and in two large tents erected upon the lawn. It was an excellent exhibition throughout; all the classes, with but few exceptions, were well filled. The groups and tables of plants were a very attractive feature. Fruit was exceptionally good, and the fruit-trees in pots sent by Messrs. T. RIVERS & SON, of Sawbridgeworth, excellent. The fine collection of plants and cut flowers from Messrs. W. BALCHIN & SONS, Hassocks and Brighton, and the excellent Begonias from Mr. T. S. WARE, Ltd., were a great assistance to the show.

GROUPS OF PLANT S.

Those arranged on the ground found a place under one of the tents, those in Class I filling a space of about 120 superficial feet. The 1st prize was taken by Mr. GEORGE MILES, Victoria Nursery, Brighton, whose group was arranged in a semi-circle, and comprised Lilies, Carnations, Orchids, Begonias, *Hydrangea paniculata*, Gloxinias, and other flowering subjects, intermingled with Crotons, Palms, Ferns, &c.—a light and elegant arrangement, tastefully set up. Mr. J. HILL, gr. to W. C. WALLIS, Esq., Withdean, was 2nd. Groups of Ferns were a feature. Mr. JAS. ADAMS was 1st with a collection formed in cones back and front, the latter mainly composed of *A. Farleyense*, the groundwork, of dwarf Ferns of handsome character. Messrs. J. HILL & SON, Edmonton, were 2nd, also with an excellent collection.

Tables of Plants serve to vary the monotonous appearance of straight lines of tables. Mr. C. Lawrence, gr. to T. OLIVER, Esq., Horsham, was 1st, having a mixture of Dwarf Palms, Feathered Cockscombs, Crotons, the variegated Japanese grass, &c.; Mr. GEO. MILLS was 2nd.

ORCHIDS.

Collections of Orchids, arranged on table with suitable foliaged-plants, were very good. Mr. H. Garnett, gr. to R. G. FLETCHER, Esq., Brighton, was an excellent 1st with examples of *Dendrobium Phalenopsis*, *D. formosum*, *Cattleyas*, *Lycaste Skinneri*, *Odontoglossum crispum*, &c.; Mr. HARPER, gr. to E. A. TUCKER, Esq., Vernon Lodge, Preston Park, was 2nd.

SPECIMEN PLANTS.

Mr. J. WARREN, Handcross Park, was 1st with six stove and greenhouse plants, which included three Ixoras. He was also 1st with six Ferns; Messrs. W. MILES & CO., were 2nd.

Mr. H. GARNETT had the best specimen Croton; and Mr. J. WARREN was 1st with six specimens.

Begonias (flowering), Cordylines, feathery Celosias, Fuchsias, zonal and Ivy-leaved Pelargoniums, Caladiums, Coleus, and table plants, were also staged in their several classes.

CUT FLOWERS.

With twenty-four bunches of stove and greenhouse cut flowers Mr. J. DAVIS, gr. to E. H. THURLOW, Esq., Brockham Hill House, Uckfield, was 1st.

Roses were better than might have been expected. Mr. W. TAYLOR, nurseryman, Hampton, was 1st; 2nd, Mr. G. W. PIPER, nurseryman, Uckfield.

With twelve Teas, scented, Mr. G. W. PIPER was 1st, having fine *Muriel Grahame* and *Princess of Wales*.

Gladiolus were shown in bold spikes by Mr. G. H. SAGE, the gardens, Bayham Abbey, Lamberhurst. Mr. H. J. STENNING, Tunbridge Wells, was a good 2nd. In each case the spikes would have been seen to better advantage had the stands on which they were staged been larger.

DAHLIAS, &c.,

are always a good feature at Brighton, and Mr. S. MORTIMER, Swiss Nursery, Farnham, was placed 1st with a very good forty-eight show, and fancy varieties which included *Duke of Fife*, *Goldfinch*, *John Walker*, *Florence Tranter*, *John Hickling*, *Rev. J. Goddan*, *Crimson Globe*, *Professor Fawcett*, *J. N. Keynes*, *Nubian*, *J. B. Service*, *R. T. Rawlings*, *Shirley Hibbard*, *Mr. G. Harris*, *Frank Pearce*, *Arthur Rawlings*, *Harry Turner*, &c.; Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, were 2nd.

With twenty-four single varieties, Messrs. J. CHEAL & SONS, who were the only exhibitors, were placed 1st with an excellent collection.

With twelve Pompon varieties, Messrs. CHEAL & SONS were again the only exhibitors, having charming bunches of *Captain Boyton*, *Adrienne*, *Snowflake*, *Whisper*, *Crimson Gem*, *Eurydice*, *Orpheus*, *Sunny Daybreak*, &c.

The class for twelve varieties of Cactus Dahlias in bunches brought a capital competition. Messrs. J. CHEAL & SONS were again 1st with finely-developed blooms; Mr. J. STREDEWICK, Silverhill, St. Leonard's, was 2nd.

Messrs. CHEAL & SONS were 1st with twelve bunches of single Cactus Dahlias, having some very pretty varieties, such as *Althea*, *Marguerite*, *Loebli*, *Sir Walter*, *Novar*, *Ivanhoe*, *Lady Rowena*, *Meg Merrilies*.

There were also classes for Dahlias shown by amateurs, in which some creditable blooms were staged.

Hardy perennials and bulbous plants, shown in bunches of twelve, made a very fine feature. Mr. G. H. SAGE was placed 1st with imposing examples of Lilies, Tritonias, Crinum

Powell, Gladiolus, Montbretias, Gaillardias, White Everlasting Pea, *Scabiosa caucasica*, &c. Mr. W. E. ANDERSON, gr. to B. PARISH, Esq., Brighton, was 2nd, also with very good bunches.

Hardy Annuals in bunches of twelve were a good feature, but a defective arrangement in the wording of the schedule led to a disqualification after the judges had made an award of a 1st prize to Mr. DAVIS. In a competition of this kind while it is not absolutely necessary a bunch should contain one variety only, which practically excludes many things, such as *Salpiglossis*, for instance, bunches of one colour are much more attractive from the decorative point of view. Zinnias, Asters, and some other cut flowers showed the effects of the recent storm.

FLORAL DECORATIONS.

The best arrangement for the centre of a dinner-table came from Messrs. BALDOCK & CO., of Ramsgate, very tastefully done with Orchids and suitable foliage; 2nd, Mr. F. RIPLEY, St. Johns, Withdean. The best bride bouquet came from Messrs. MARIE BALDOCK, Brighton; Messrs. DURRANT & CO., Eastbourne, were 2nd, but neither up to the form previously seen at Brighton. With a ballroom bouquet Messrs. BALDOCK & CO. were 1st, with a rich arrangement in Orchids.

FRUIT, &c.

The display of fruit was very good. Mr. E. NEAL, The Gardens, Tilgate House, Crawley, was 1st with eight dishes, having excellent Muscat of Alexandria and Black Hamburgh Grapes, Peaches, Nectarines, &c.; Mr. W. CHESTER, Cosham, was 2nd. Good Grapes were shown in several classes.

The best two dishes of Peaches were *Sea Eagle* and Mr. Gladstone, from Mr. FAIRIS, Wickham House, Hassocks; Mr. J. GORE, Polegate, was 2nd with *Violette Hâtive* and *Alexandra Noblesse*. Mr. GORE had the best two dishes of Nectarines, in *Stanwick Elruge* and *Pine apple*.

The best single dish of Peaches was very handsome *Princess of Wales*, from Mr. J. ALLAN, Ashwell Park, Tunbridge Wells; Mr. H. ELLIOTT was 2nd, with *Sea Eagle*.

Mr. FAIRIS had the best dish of Nectarines, showing good *Pine-apple*.

Plums and Green Gages were largely shown. Cherries and Figs were also good; and Apples and Pears were of excellent quality.

Vegetables were shown largely, and Potatoes were bright and clean, but coloured varieties few; there appears to be a kind of prejudice against them at Brighton.

DANIELS' BROS., LTD., PRIZE COMPETITION.

AUGUST 23.—The second competition for this season for valuable cash prizes, offered by Messrs. DANIELS BROS., LTD., Royal Norfolk Seed Establishment, Norwich, for the produce of seeds supplied to their customers during the present year, was held at their warehouse, Bedford Street, on the above date.

The great feature of the exhibits was a magnificent lot of their new Potato, *Sensation*, of which 161 lots were staged. Some of the dishes were remarkably fine, both as to size and quality. The Giant White Runner Beans were well represented, although the season has not been favourable to the growth of these. *Scarlet Perfection* Tomatoes were exceedingly fine, showing great uniformity of character, which speaks well as to the great care taken by this firm in the selection of this fine strain. *Daniels' Dwarf Perfection*, a beautiful strain of Aster, were a nice lot, the blooms being of good substance, and of charming variety of colour. *Daniels' Lemon* and *Orange African Marigold* were well worthy of attention, being of splendid shape and colour. Some of these measured 14 inches in circumference, and were of perfect shape.

Of items of interest to gardeners, mention may be made of the following:—Potato *Daniels' Sensation*: 1st, G. H. COPP, The Gardens, Holnest Park, Sherborne; 2nd, J. Gilmour, Seacox Heath, Hawkhurst, Sussex; 3rd, W. C. BUDREY, 106, Old Palace Road, Norwich.

Bean, *Daniels' Giant White Runner*: 1st, Mr. W. C. BUDREY, 106, Old Palace Road, Norwich; 2nd, Mr. R. HOWES, gr. to Mr. E. ORAMS, The Elms, Unthank Road, Norwich; 3rd, Mr. T. ELLIS, Pendra Mill, Llanfyllin, Mont.

Tomato, *Daniels' Scarlet Perfection*: 1st, Mr. N. KNELLER, Malshanger Gardens, Basingstoke; 2nd, Mr. JOHN HOPKINS, 9, Gladstone Terrace, East Tiverton, Bath; and 3rd, Mr. G. H. COPP, The Gardens, Holnest Park, Sherborne.

Aster, *Daniels' Dwarf Perfection*: 1st, Mr. J. SHARP, 40, Market Street, Carnforth; 2nd, Mr. W. BENTLEY, Old Hadham Road, Bishop Stortford; and 3rd, Mr. J. WOOD, 110, Lancaster Road, Carnforth.

The prizes amounted from £3 for 1st prizes with Potatoes and Tomatoes, downwards.

MISCELLANEOUS SOCIETIES.

Croydon Mutual Improvement.—The August meeting of this Society was held at the "Sunflower" Temperance Hotel, George Street, on August 21. Mr. W. J. SIMPSON presided, and there were thirty-four members present. Seven new ones were elected. Mr. W. HARRIS read a paper on "Bulbs," and described the best method of cultivation, propagation, and harvesting, as practised by the English and Dutch trade growers. A selection was given of the best varieties of Hyacinths, Tulips, Narcissi, Lily-of-the-Valley, Freesias, Lilies, Spanish and other Iris, Anemones, &c. The

forcing of these species and their cultivation for the supply of flowers for cutting, and for use in decoration, or in flower-beds, was described. The Chairman announced that an excursion to Horsham had been arranged, and that visits will be made to the gardens of C. J. Lucas, Esq., Warnham Court; and to Leonard's, the residence of Sir E. G. Loder, Esq. The next meeting will be held on September 18, when Mr. C. A. Blogg will read a paper on "The Cacti of the U.S.A., Mexico, and California, and How to Grow Them."

Kenilworth Horticultural.—The seventh annual show was held in the Castle grounds, Kenilworth, by permission of the Earl of Clarendon, on the 23rd ult. The show, as a whole, was an exceptionally good one. The entries numbered 859, as against 825 last year, and the general quality of the exhibits showed improvement. Some very fine groups of plants, not for competition, were shown by Lord Leigh, Mrs. Nelson, Mr. Bekeford Wright, and others; and a collection of fruit from Messrs. Geo. Bunyard & Co., Maidstone, was a feature of the show; Messrs. Tootell & Sons, Southampton, exhibited Vegetables; Messrs. Hinton Bros., Warwick, fruit; and Messrs. Kimberley & Son, a group of plants.

Obituary.

ERNEST MÜLLER, nurseryman and florist of Erfurt, Prussia, died on Thursday, August 23, after an illness of four days' duration. The deceased was born at Rostock, in Mecklenburg, and in 1877 entered the service of Herr J. C. Schmidt, of Erfurt, as clerk and traveller, becoming subsequently partner, and in 1891 sole possessor. The firm had a large business connection in this country.

WILLIAM DODDS.—This well-known Dahlia raiser of forty and fifty years ago, who had almost outlived both his reputation and his contemporaries, died on Friday, August 17, at Cheltenham Road, Bristol, at the age of 91. He came south from Scotland in 1847, and entered the service of Col. Baker, Fisherton, Salisbury, as under gardener, and subsequently became head gardener, a position he held for the space of thirty years. Col. Baker was an enthusiast in Dahlias, and W. Dodds soon made himself famous as a raiser of new varieties, and early in the fifties new ones were announced bearing his name. His name appeared as an exhibitor in the list of awards made at the first National Dahlia Show held in St. James's Hall in 1858. On the death of Col. Baker, Mr. Dodds went as gardener to Sir Greville Smythe, Bt., Ashton Court, Bristol, finally retiring and living on his means, near to Clifton. He was one of the judges of Dahlias at the exhibitions of the National Dahlia Society until within the last few years.

MRS. LEONARD SUTTON.—We regret to have to record the death of Mrs. Leonard Sutton, wife of Mr. Leonard Sutton, of Reading, at the age of thirty.

MARKETS.

COVENT GARDEN, AUGUST 30.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day but often several times in one day. Ed.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz. 5 0-7 0	Ferns, small, per 100 4 0-6 0
Arbor-vitæ, var., doz. 6 0-36 0	Ficus elastica, each 1 6-7 6
Aspidistras, p. doz. 18 0-36 0	Foliage plants, var., each 1 0-5 0
— specimen, each 5 0-10 6	Lily of Valley, each 1 9-3 0
Cannas, per dozen 18 0	Lycopodiums, doz. 8 0-4 0
Crotons, per doz. 18 0-30 0	Marguerites, per dozen 8 0-12 0
Cyclamen, per doz. 8 0-10 0	Myrtles, per dozen 6 0-9 0
Dracænas, var., per doz. 12 0-30 0	Palms, various, ea. 1 0-15 0
— viridis, per doz. 9 0-18 0	— specimens, each 21 0-63 0
Ericas, var., per doz. 12 0-36 0	Pelargoniums, scarlet, per dozen 8 0-12 0
Euonymus, various, per dozen 6 0-18 0	— Ivyleaf, per doz. 8 0-10 0
Evergreens, var., per dozen 4 0-18 0	Spiræas, per dozen 6 0-12 0
Fern, in variety, per dozen 4 0-18 0	

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus "Fern," bunch 2 0-2 6	Maidenhair Fern, per doz. bunches 4 0-8 0
Carnations, per doz. blooms 1 0-2 0	Marguerites, p. doz. bunches 2 0-4 0
Cattleyas, per dozen 9 0-12 0	Mignonettes, dozen bunches 4 0-6 0
Eucharis, per dozen 2 0-4 0	Montbretias, bunch 0 6 —
Gardenias, per doz. spikes 1 6 —	Odonotoglossums, per dozen 4 0-8 0
Gladioli, scarlet, per dozen 2 6-5 0	Roses, Red, per doz. — Tea, white, per dozen 1 0-3 0
— white, per doz. 2 6-4 0	— Safrano, per dozen 1 0-3 0
Lilium Harrisii, per dozen blooms 4 0-5 0	— Catherine Mermet, per dozen 2 0-5 0
Lilium lancifolium album, doz. blms. 1 0-3 0	Smilax, per bunch 4 0-5 0
Lilium rubrum, doz. 3 0-5 0	Tuberose, per doz. blooms 0 4-0 6
Lilium longiflorum, per dozen 4 0-5 0	
Lily of Valley, per doz. bunches 12 0-24 0	

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, English, per bushel—	Melons, each 1 0-1 6
Suffields 1 6-2 6	— Foreign Rocks 1 6 —
Keswicks 1 0-2 0	Melons, Valencia, cases (24 to 36) 4 0 5 0
Julians 1 6-2 6	Nectarines, per dozen—
Quarrendens 3 6-4 0	Class A. 6 0-9 0
Various 1 0-2 6	Class B. 2 0-4 0
Apricots, per dozen 1 6-2 0	Oranges, Naples, p. case 10 0-12 0
Bananas, bunch 6 0-9 0	Peaches, per doz.—
Cobnuts, lb. 0 34-0 4	Class A. 6 0-9 0
Figs (New), per dozen 1 0-1 6	Class B. 2 0-4 0
Filberts, per lb. 0 3-0 33	Pears, Californian, cases 5 0-6 0
Grapes, Hamburg, new, per lb. 0 6-1 6	— Williams, French in boxes (48) 2 0-3 0
— Alicante 0 10-1 3	— in crates, according to count 5 6-15 6
— Colmar 1 6-2 9	Pines, each 2 0-5 0
— Gros Maroc, lb. 1 0-2 6	Plums in sieve 1 0 —
— Muscats, A., per lb. 2 0-2 6	— English, various per sieve 1 0-2 6
— Muscats, B., per lb. 0 9-1 6	Green Gages in sieves 2 6-4 6
— Belgian, per lb. 0 7-1 0	
— Denia, in barrels 4 0 —	
Lemons, case 27 6-32 6	

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Aubergines, per dz. 2 6 —	Mint, new, p. doz. bunches 1 6 —
Artichokes, Globe, per doz. 1 0-2 0	Mushrooms, house, per lb. 1 0-1 6
Beans, Scarlet Runners, bush. — English, dwarf, per bushel 2 0-3 0	Onions, picklers per sieve 3 0 —
— per sieve 1 6 —	— per bag 4 0 —
Beetroot, bushel 1 6 —	— Green, dozen 1 6-2 0
Beet, per dozen 0 6 —	— cases 5 0-6 0
Cabbage, tally 1 6-2 0	Parsley, 12 bunches per sieve 0 9-1 0
— dozen 0 6 —	Peas, per bushel 3 0-4 0
Carrots, new, per dozen 0 9-2 0	Potatoes, per ton 60 0-90 0
— washed, in cwt. bags 3 0 —	Radishes, 12 bunches 1 0 —
Cauliflowers, per dz. 1 6-2 6	Salad, small, punnets, new, per dozen 1 3 —
Cress, per dozen punnets 1 6 —	Shallots, new, per sieve 2 6 —
Cucumbers, doz. 1 0-2 0	Spinach, persieve 1 0-1 6
Endive, new French, per dozen 1 6 —	— bushel 2 0 —
Garlic, new, cwt. 18 0 —	Tomatoes, English, new, per 12 lb. 2 0-3 0
Horseradish, English, bundle 1 6 —	— Channel Islands, per lb. 0 2-0 23
— foreign, per bundle 1 0-1 4	— French, crates 2 6 —
Leeks, per dozen bunches 1 6 —	Turnips, new, per dozen 2 0-3 0
Lettuce, English Cabbage, bush. 1 6 —	— in bags 2 6-3 0
— English Cos, per score 1 0-1 6	Vegetable-Marrows, per dozen 0 6-1 0
	— tally 1 0-1 6
	Watercress, p. doz. bunches 0 4-0 6

REMARKS.—Some fine home-grown Peaches are on sale. Peas are now nearly over. The Spinach is the ordinary and the New Zealand. There is a large supply of Tomatoes, Pumps, and Apples. Vegetable-Marrows are very cheap.

POTATOES.

Potatoes: Various and Kents, 61s. to 80s. per ton. John Bath, 32 & 34, Wellington Street, Covent Garden.

FRUIT AND VEGETABLES.

GLASGOW: August 29.—The following are the averages of the prices recorded since our last report:—Cucumbers, 3s. to 4s. per dozen; Onions, Valencia, 4s. 4s. per case; do., 5s. 5s. 6d. do.; Pears, Angers' Williams, 2s. 3d. to 3s. per case; Duchesses, 2s. to 2s. 6d.; Havre, 4s. to 5s.; Belgian, 1s. to 1s. 3d. per small molley; Dutch, 1s. 6d. to 2s. 6d. per small sieve; Californians, 4s. to 6s.; Apples, English, large, 10s. to 15s. per cwt.; do., medium, 6s. to 7s. do.; do., small, 3s. to 4s. do.; Americans, 12s. to 20s. per barrel; Tomatoes, home, 6d. to 9d. per lb.; do., Guernsey, smooth, 8d. to 4d. per lb.; Grapes, English, 1s. to 1s. 3d. per lb.; do., Guernsey, 10d. to 1s. per lb.; Almeida, 3s. 6d. to 5s. per barrel; fine quality, 7s. to 10s. do.; Melons, 26s. 4s. 6d. to 5s. 6d. per case; do., 36s. 5s. to 6s. do.; Greengages, French, quarters, 4d. to 5d. per lb.; halves, 2d. to 3d. do.; French Goliaths, 3d. to 34d. per lb.; English Earlies, 9s. to 11s. per cwt.; Dutch, 1s. to 1s. 6d. per half bushel; Victorias, Middlesex, 5s. 6d. to 6s. 6d. per half sieve; Winchester, common, 9s. to 12s.; Lemons, Palermo, 300s. 20s. to 24s. per case; 360s, 12s. 6d. to 20s. do.; Bananas, extras, 11s. to 13s. per bunch; No. 1, 9s. to 10s. do.; No. 2, 7s. 6d. to 9s. do.; Mushrooms, 10d. per lb.

LIVERPOOL: August 29.—Wholesale Vegetable Market.—Potatoes, per cwt.: Early Regents, 4s. to 4s. 9d.; Kidneys, 5s. to 5s. 9d.; Lynn Grey, 3s. 9d. to 4s. 6d.; Turnips, 6d. to 8d. per 12 bunches; Swedes, 1s. 6d. to 2s. per cwt.; Carrots, 6d. to 8d. per 12 bunches; Onions, foreign, 3s. 6d. to 4s. 6d. per cwt.; Parsley, 4d. to 6d. per dozen bunches; Lettuce, 10d. to 1s. per dozen; Cucumbers, 1s. to 2s. 6d. do.; Cauliflowers, 10d. to 2s. do.; Cabbages, 6d. to 10d. do. Celery, 1s. 9d. to 2s. 3d. do.; Peas, 3s. 6d. to 4s. per bush.; Beans, 1s. to 1s. 3d. do.; do., Kidney 8d. to 10d. per peck; Scarlet Runners, 8d. to 10d. do. St. John's Potatoes, 1s. 2d. per peck; Grapes, English, 1s. 6d. to 3s. per lb.; do., foreign, 4d. to 8d. do.; Pines, English, 4s. to 6s. each; Apples, 2d. to 4d. per lb.; Tomatoes, 4d. to 6d. do.; Peas, 1s. 2d. to 1s. 6d. per peck; Cucumbers, 3d. to 4d. each; Mushrooms, 8d. to 1s. per lb. Birkenhead Potatoes, 1s. to 1s. 3d. per peck; Cucumbers, 2d. to 3d. each; Damsons, 3d. per lb.; Grapes, English, 1s. 6d. to 3s. per lb.; do., foreign, 4d. to 8d. do.; Mushrooms 4d. to 10d. do.; Peaches, 2d. to 3d. each.

SEEDS.

LONDON: August 29.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that although to-day's market was thinly attended, a very cheerful feeling, in view of the all-round advance in prices, was prevalent. Trifolium, through getting scarce favours sellers. Red Cloverseed, following the pronounced lead of America, continues its upward movement. For Trefoil and Italian Ryegrass more money is asked also. New Mustard, Kale, and Rapeseed, find buyers on former terms. There is a good inquiry for Seed-Rye and Winter Tare. Canary-seed shows an advancing market; whilst Blue Peas and Haricot Beans are also dearer.

CORN.

AVERAGE PRICES OF British Corn (per imperial qr.), for the week ending August 25, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.	1900.	Difference.
	s. d.	s. d.	s. d.
Wheat	24 7	28 10	+ 4 3
Barley	26 5	24 10	- 1 7
Oats	17 1	18 8	+ 1 7

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Roy. Horticultural Society's Gardens at Chiswick, London, for the period August 19 to August 25, 1900. Height above sea-level 24 feet.

AUGUST 19 TO AUGUST 25.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			
		AT 9 A.M.			RAINFALL.	At 1-foot deep.			LOWEST TEMPERATURE ON SHADY GLASS.
		Dry Bulb.	Wet Bulb.	Highest.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.	
		Dry Bulb.	Wet Bulb.	Lowest.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.	
SUN. 19	S.W.	66° 15'	59° 57'	77° 35'	ins.	66° 9'	63° 8'	60° 14'	5
MON. 20	W.S.W.	62° 7'	59° 9'	74° 15'	0.07	66° 3'	63° 8'	60° 15'	5
TUES. 21	W.S.W.	63° 6'	60° 3'	71° 55'	0.20	65° 9'	63° 8'	60° 15'	5
WED. 22	W.S.W.	62° 8'	58° 1'	67° 8'	0.28	65° 4'	63° 8'	60° 15'	5
THU. 23	E.S.E.	54° 6'	53° 5'	66° 2'	0.48	53° 6'	63° 3'	60° 24'	4
FRI. 24	S.	66° 5'	60° 6'	68° 49'	0.8	61° 9'	62° 5'	60° 42'	8
SAT. 25	S.W.	58° 6'	56° 8'	65° 5'	0.48	60° 12'	62° 3'	60° 24'	5
MEANS...	...	62° 15'	58° 37'	70° 25'	0.41	61° 18'	64° 5'	63° 00'	24.5

Remarks.—The weather during the past week has been generally dull, and there were only two fine days. Rain fell heavily on the 23rd, and on most days. The wind has been very strong.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending August 25, is furnished from the Meteorological Office:—

"The weather during this week was very unsettled and rainy generally, but intervals of clear or partially clear sky were often experienced over our southern counties. Thunderstorms were not infrequent, especially over England, and during a thunderstorm in the neighbourhood of Edinburgh on Thursday a sharply-defined waterspout was observed."

"The temperature differed very little from the mean over the greater part of the kingdom, but was 2° below it in Scotland, E., and 2° above it in England, E. The highest of the maxima were recorded, as a rule, during the earlier days of the week, and ranged from 81° in England, E., and 78° in England, S., to 68° in Scotland, E. The lowest of the minima were registered towards the end of the period, and varied from 41° in Scotland, W., and Ireland, N., to 47° in England, E., and 50° in Ireland S., and the Channel Islands.

"The rainfall exceeded the mean in all districts; in the N.E. of Great Britain the fall was about three times as great as the normal, and in all the western parts of the kingdom and over central England more than twice as great.

"The bright sunshine was deficient in all districts except England, S., and the Channel Islands. The percentage of the possible duration ranged from 56 in the last named district, and 55 in England, S., and from 39 in England, E., to between 18 and 20 in Ireland, 12 and 17 in Scotland, and to 14 in England, N.E."

GARDENING APPOINTMENTS.

MR. JOHN DICKSON, late Foreman at Douglas Castle gardens, as Head Gardener to Her Grace ADELINE, Duchess of Bedford, Chenies, Rickmansworth.

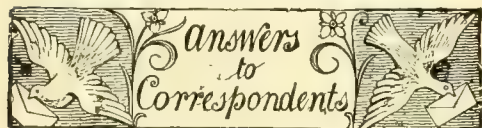
MR. R. ALDERMAN, who has been Kitchen Garden Foreman at Welbeck Abbey for the past eight years, as Gardener to CHAS. R. W. ADEANE, Esq., Babraham Hall, Cambridge. Mr. ALDERMAN commenced his new duties on August 20.

MR. G. W. SMITH, Gardener to R. J. C. MITCHELL, Esq., Moreton Court, as Gardener to Sir JAMES RANKIN, Bart, M.P., Brynwyn, Hereford.

MR. CHAS. JENNINGS, late of Walk House Gardens, Barrow-on-Humber, Hull, as Head Gardener to F. W. JAMESON, Esq., Aston Hall, North Ferriby, Brough, Yorkshire.

MR. JOHN JUSTICE, for the past eight years Head Gardener at The Nash, Kempsey, Worcester, as Head Gardener to A. KNOWLES, Esq., Alvaston Hall, Nantwich, Cheshire, entering on his duties on Monday, October 1.

MR. JAMES STOKES, Edinburgh, at one time Foreman at Stoke Edith Park Gardens, as Head Gardener to W. MIDDLETON CAMPBELL, Esq., Fen Place, Turner's Hill, Sussex.



BEGONIA VARIETY WITH STRIPED FLOWERS: *H. Hodge*. If not quite unique, the varieties sent are very uncommon as yet in gardens, and the flowers very double. The stripes give the flowers a resemblance to the flaked Carnations, and make them altogether pleasing and attractive.

BOOKS: *D. P. How to Lay out a Garden*, new edition, by Ed. Kemp. Bradbury, Agnew & Co., Ltd., Bouverie Street, Fleet Street, E.C. *Landscape Gardening*, by H. E. Milner. Simpkin, Marshall, Hamilton, Kent & Co., Ltd., Stationers' Hall Court, London. — *Bibliography of the Hawthornias*: A. C. The book has not, as yet, reached us, and we do not know if it is published.

CARNATIONS AND PICOTEES: *F. Mason*. The schedule clearly states that Carnations were to be shown, not Picotees; and those who showed the latter should have been disqualified.

DAHLIA FLOWER WITH TWO FACES: *A. C. B.* This condition is by no means uncommon, as is proved by the number of instances forwarded each year to this office.

DICENTRA EXIMIA: *V. P. B.* The expansion and raggedness of the blooms are attributable to bees or other insects.

GARDENING SITUATION IN THE U.S.A.: *Anxious*. You should advertise in this journal, or in such American journals as the *Florists' Review*, and *Florists' Exchange*, all of which are published in New York.

GRAPES: *F. B.* Mildewed. See recent issues for treatment.

GRAPES AT THE FORTHCOMING CRYSTAL PALACE FRUIT SHOW: *A. C.* The variety Bowwood Muscat would not be admissible as "any other white Grape," it being identical with Muscat of Alexandria, which is a variety that is demanded. Canon Hall would do, but it is an unsatisfactory doer, the encouragement of whose cultivation is undesirable. Foster's, or Buckland Sweetwater, or white Tokay, would be more likely to please the judges. The last-named is a fine prolific Grape of the best quality, with bunches of moderate size.

MUSCAT GRAPES: *C. P.*, *Highgate*. The bunch sent for our inspection is badly shanked, which may have been brought about by a check caused by overcropping the Vines this year or last; by excessive reduction of the foliage at one time,

after an unchecked growth of weeks or months; from the soil having got into an unhealthy condition from some cause or causes, a circumstance which is very probable in a border made of over-rich materials, or of close, tenacious loam. There are many causes of shanking, but which it is only the gardener in charge can say with certainty.

NAMES OF FRUITS: *A. J. B.* 1, Potts' Seedling; 2, Northern Greening; 3, Gros Rousselet; 4, Early Wax; 5, Calville Rouge d'Été; 6, Quite black and decayed, beyond all recognition. — *W. H. S.* 1, Unknown, and worthless if the specimens sent are characteristic; 2, Beurré Précoce. — *J. P.*, *Chester*. Apparently a poor example of Margaret, familiar to some as the Lammis Apple. — *Ignoramus, Essex*. 1, Pigeonnet; 2, decayed; 3, Fondante de Brest.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.* — *K. & S.* *Spiraea callosa*. *C. S.* Thank you for your care in packing the specimens. 1, *Helianthus multiflorus*; 2, *Helianthus rigidus*; 3, *Rudbeckia Neumannii* of gardens; 4, 5, 6, *Phloxes*: consult some nurseryman who makes a specialty of them. — *J. F.*, *Harrow Weald*. *Ligustrum ovalifolium*. — *P. C.* 1, *Sidalcea malvaeflora*, Gray; 2, probably *Echinocystis lobata*, Torr. and Gray. — *C. J. P.* *Nandina domestica*, Thunb. — *Rus in urbe*. The leaves which you send are those of *Senecio mikanioides*, (German Ivy). It is a much-branched South African plant, and makes a good window creeper; evergreen, flowers yellow. — *J. T.*, *Dartford*. A very showy variety of *Odontoglossum Harryanum*. — *H. W. T.* The form of *Cattleya labiata*, may be *C. Trianei*, though it is flowering out of season, and has some peculiar features about it similar to *C. Gaskelliana*. It is a very large flower, though not finely coloured. — *H. W. 1*, *Cirrihopetalum maculosum* (*Bulbophyllum umbellatum*); 2, *Rose Celine Forestier*; 3, *Centranthus ruber*; 4, *Tanacetum vulgare crispum*. — *R. W.* *Lysimachia vulgaris*. — *G. M.* 1, *Oncidium Gardneri*; 2, *Oncidium incurvum*. — *J. W.* 1, *Cystus ladaniferus*, Gum Cistus; 2, *Olearia Haasti*; 3, *Ribes grossulariifolia* probably, send flowers; 4, *Picea cephalonica*; 5, *Abies grandis*; 6, *Pinus excelsa*. — *Seeds*. 1, *Sempervivum tortuosum variegatum*; 2, *Gesnera splendens*; 3, *Poinsettia pulcherrima*; 4, next week; 5, *Allamanda Schottii*; 6, *Sedum Sieboldi variegatum*; 7, *Euonymus japonicus aureo-variegatus*. — *T. R.* *Brassavola nodosa*. — *T. T. S.* Probably *Acacia cordata*; send in flower.

NYMPHAEAS: *G. K.* Divide the root stocks either now or in the spring; it is immature at what season, unless the water is likely to freeze to the bottom, in which case division in the spring would be advisable.

ROSE-TREES FOR A GREENHOUSE: *V. P. B.* *A. K.* Richardson, Jaune Desprez, Catherine Mermet, Marie Van Houtte, Niphotes, Madame P. Cochet, and Grüss an Teplitz. These are but a few Teas that you might grow in a cold greenhouse; but if you can have but one, choose the third.

SPECIAL PRIZE AND NO COMPETITORS: *G. H.* You cannot, in fairness, be asked to contribute the three guineas under the circumstances.

STRAWBERRY PLANTS IN BARRELS: *Lady Langford*. The barrels should have a cubical contents of 20 to 30 gallons, and they should not have been used for holding any liquid inimical to plants; if they have, they should be fired by putting into them shavings dipped in petroleum or turpentine—a little charring of the wood acting as a preservative. Having done this, with a centre-bit or fret-saw cut holes about 1 foot apart, and 2 inches in diameter, in tiers in the staves, beginning at about 4 inches from the top, and ending at 6 inches from the bottom; then cut a hole 3 inches in diameter in the centre of the bottom (the head must be knocked out), and place a drain-pipe on end over the hole, and add lengths of pipe as the barrel gets filled with soil. The bottom of the barrel should have smaller holes made in it as exits for the water, and these should be covered with concave pieces of earthenware or oyster-shells, and enough rubble as will raise it 4 inches. Over this place first rough turfy soil, and a little prepared soil, say turfy loam, three-quarters, leaf-mould or

rotten dung one-quarter, mixed with some sand if the loam be very stiff; make it quite firm, but do not use a rammer in doing this, and having brought it up nearly to the level of the lowermost row of holes, proceed to plant, using strong, well-rooted young plants of the current season, and proceed thus till the barrel is filled. It will be an easy matter to push the small crowns of leaves through the holes without damaging the root in the operation. The balls should be placed on their side, and close to the staves. When a layer is planted, the soil should be afforded a small quantity of water, and the work stopped for three or four hours, in order to let the water drain away. Having planted the top as well as the sides, the barrels should be stood on a few bricks placed under the rim, in order that it may be quite clear underneath. The barrel should be stood in full sunshine, and the soil afforded water occasionally till winter sets in, when no more will be needed. Some protection against rain and snow should be afforded at that season, otherwise soddening of the soil might occur. Keep the runners picked off. Treat the plants in a perfectly hardy manner, and if an old frame-light be used as a protection against rain and snow, the barrels must be left open to the weather at the sides.

SWEET PEAS OUT-OF-DOORS: *Lady Langford*. It would be safer to sow for the earliest bloom in the latter part of February than in the autumn, using 3-inch pots, and putting half-a-dozen seeds in each about half-an inch under the surface, making the soil firm. The seeds may be started in gentle heat; but as soon as they show above the soil, they should be afforded cold-frame treatment, with plenty of air afforded in mild weathers. These potsful of plants should be put out in the open ground in April, just as they are, in clump, or lines, at a foot apart. Dress the ground with muriate of potash, but use no nitrogenous manure. Deep trenching of the land does much good. Sweet Peas succeed the best in sunny positions, giving but few flowers if shaded in any way. Put slender twigs to the plants as soon as they reach 3 inches in height, and tall Pea-sticks when they have topped these.

TOMATO FLOWERS: *W. H. S.* The flowers are fertilised by their own or strange pollen. Usually there is no difficulty, although in very hot, dry, and in muggy, windstill weather, setting is imperfect or fails entirely. A tap with the hand, or a puff given with a small pair of bellows, will do all that is required to liberate and distribute the pollen over the blossoms. The flowers of the Tomato are hermaphrodite, that is, each individual flower possesses male and female organs. In crossing, you must remove the stamens from the flowers you wish to cross with pollen from another variety, or they may become fertilised with their own.

WINTER-FLOWERING CARNATION: *V. P. B.* Winter Cheer.

YEW HEDGE: *Reader*. The clipping should be done in August, so as to allow of a small amount of new growth to hide the marks of clipping; but this season being moist, and a good deal of solar heat in the soil, it may not be now too late. The hedge might be cut with the pruning-knife, taking out all the longer shoots, and leaving the short ones, so as to give it a smooth surface, and leave the clipping till the spring.

COMMUNICATIONS RECEIVED.—*R. Penn.*—*F. Fox*.—Board of Agriculture, L. C.—*W. D.*—*Chad.*—*C. R.*—*J. L.*—*W. L.*—*Subscriber.*—*T. N. S. P.*—*Querius.*—*J. Pease.*—*W. B.*—*C. A. B.*—*W. T.*—*F. G. F.*—*F. B. G.*—*W. G.*—*Carpenter.*—*G. A. B.*—*Curran.*—*W. Besten.*—*M. T. M.*—*Sir C. Lawson.*—*R. L. O.*—*H. M.*—*Max Ludewig.*—*P. B.*, *Fiji.*—*O. T. D.*—*R. D.*

Continued Increase in the Circulation of the
"GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

➡ TREBLED. ⬅

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



PRIZE GROUP SET UP AT THE LATE SHOW AT WOLVERHAMPTON BY MR. J. CYPHER OF CHELTENHAM.



THE

Gardeners' Chronicle

No. 715.—SATURDAY, SEPT. 8, 1900.

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View in the grounds at Highbury, Birmingham, the seat of the Right Hon. J. Chamberlain, M.P. (Supplement).	

NEW VARIETIES OF ROSES.

THERE has been a great deal of talk about new races of Roses, and although these are not likely to interest exhibitors very much, yet all Rose-growers are not Rose exhibitors, or if so only exhibitors of garden Roses. They have not the time or patience for the cultivation of what are called exhibition flowers; many, indeed, run them down as unworthy of the gardener's skill; they call them "fat and bloated," ignoring the fact that but for the production of these flowers the popularity of the Rose would never have reached the height that it has done; but let us be just all round, all honour be to those who strike out new paths and ask us to admire beauties only just revealed.

Amongst those Roses of which great expectations have been formed, and which have attracted much attention among American growers, is the trailing Rose Wichuriana, and several remarkable hybrids have been raised from it, but these are of rampant growth, and require therefore a considerable amount of room, more indeed than can be afforded by some of our more enthusiastic growers of Roses; indeed,

this is the great difficulty which many of us experience. When you have a selection of the Penzance Sweet Briars, Paul's Carmine Pillar, Rosa macrantha, Paul's single White, Bardon Job, Paul's Royal Scarlet, and Polyanthus simplex, many are obliged to call out, "Hold, enough"; of course, where there is plenty of room it is a totally different matter, and I think nothing can be more delightful than the grace and elegance of these single-flowered Roses; nor must we forget how beautiful in the early season are the Austrians, both copper and yellow; but all these have the one defect, they only bloom once, and therefore the object must be to get perpetual-blooming single-flowered Roses. To Messrs. Dickson & Sons, of Newtownards, must be accorded the honour of introducing a race of single flowered Teas, and Hybrid Teas, in which these two objections, the rampant growth and too evanescent character of their blooms, have been obviated. These raisers have succeeded in obtaining some very beautiful flowers which are bound to find their place in most Rose gardens of the future. They are dwarf in habit and they flower continuously from June to November. At a recent show in Belfast this firm obtained the 1st prize for twelve single-flowered Roses, eleven of them being of their own raising, the twelfth being white Rugosa. The three most remarkable of these are Irish Beauty, Irish Modesty, and Irish Glory. These varieties were shown a year ago at the Crystal Palace, and were much admired. Mr. Burrell, of Cambridge, who has recently seen them at home, thinks very highly of them, and he is no mean judge.

This firm too, has again been successful in the raising of exhibition Roses; they have obtained the Gold Medal of the National Rose Society twice—once for Alice Lindsell, a creamy-pink Rose of great substance and fine form, which has many qualities to recommend it to an exhibitor, although it is of a colour of which we have many at the present day. The other is Duchess of Portland, which seems to bear considerable resemblance to Kaiserin Augusta Victoria, though of a much deeper yellow tint. My friend, Mr. Burrell, who has seen them growing in their Rose-house in Ireland, speaks very highly of their exhibition Roses, of which he says that Muriel Grant is in every respect a magnificent Rose. Florence Pemberton, by the same raiser, an almost white hybrid Tea, promises to be a great addition to that class. Edith D'Ombraïn, another of their Roses, is a beautiful Rose, very fresh in colour, and apparently a late bloomer. They have also some one or two dark-coloured hybrid perpetuals—a class in which we require some additions; one of them is in the style of Horace Vernet, but is a strong grower, and doing well as a cut-back, in which form Horace Vernet rarely ever succeeds—the fine blooms which are constantly seen of it being the growth of maiden plants. If these answer to their present high promise, they will be a great boon to exhibitors, especially amongst the smaller growers, who do not care to fill their gardens with plants that only last for one year.

I do not think that the foreign raisers have been very successful in their latest ventures; nothing seems to have come to us that is likely to take a permanent place; several of their new Teas have much of the China character in them. No new Tea seems to have come before us that is likely to be of real value; and I do not think that any one on this side of the Channel has seen anything amongst the new

hybrid perpetuals worthy of notice. This has been for some years the case so far as French Roses are concerned, and if you take any stand of exhibition Roses you will be surprised to find how long ago the flowers were sent out. The following Roses which appear in so many prize stands have been upwards of twenty years in cultivation, they have not been superseded by any of more modern date, and are likely, I think, to hold their own against any new comers. Charles Lefebvre, 1861; A. K. Williams, 1877; Alfred Colomb, 1865; Baroness Rothschild, 1867; Beauty of Waltham, 1862; Dr. Audry, 1864; and Général Jacqueminot, 1853; these are only a few in the Hybrid Perpetual class, and the same way in the Tea and Noisettes, the older varieties still maintain their position. What Roses can beat Maréchal Niel, Catherine Mermet, or Comtesse de Nadaillac. Now and then we get hold of a gem, such as Maman Cochet or Ernest Metz, but I do not think that even those varieties equal the older ones. I am aware that there are a good many raisers whose productions have not been brought forward this season, but we may hope that from Waltham Cross and Cheshunt some new Roses may, as in times past, gladden the eyes and heart of many a rosarian. Why is it, one may ask, that so few new Roses are brought forward at the Drill Hall meetings of the Royal Horticultural Society? One indeed, Souvenir de Catherine Guyot, obtained an award of merit there, but then it is not an absolutely new Rose. On the whole then, I am not very sanguine as to what may be brought out this autumn, and shall be only too glad to find that my ideas on this subject are incorrect; of course I have only alluded to those Roses which have in one way or another come before me. *Wild Rose.*

ORCHID NOTES AND GLEANINGS.

CATTELEYA WAVRINIANA, Hyb. Nov.*

I HAVE lately received this very remarkable hybrid from Mr. Peeters, nurseryman, of St. Gilles, Bruxelles, who asked me to dedicate it to the Marquis de Wavrin. It was obtained by fertilising a flower of *C. Warscewiczii* by *C. granulosa* var. *Schofieldiana*. In habit and foliage it much resembles *C. Atlanta inversa* (see *Dict. Icon. Orchid.*, *Cattleya hybrida*, t. 11). The flowers are also similar in form, but they are larger and more richly coloured; they attain a diameter of 17 to 18 centm. The sepals and petals are of rich, reddish-brown, tinted with yellow; the lip has the form of that of *C. granulosa*, but is larger; the lateral lobes elongated, acute, encircling the column, of a clear yellow, tinted with purple towards the anterior margin; terminal lobe broad, long stalked, transversely reniform, rounded, of a bright crimson colour, a little whitish towards the margin, the upper surface provided with rather prominent veins, and slightly granulose; column white, and lightly tinted with rose.

In the organs of vegetation as well as in the breadth and consistence of the flower it approaches

* *CATTELEYA WAVRINIANA*, Cogn.—Pseudobulbis longiusculis, clavatis, apice, 1—2 phyllis; foliis coriaceis, oblongo-ligulatis; floribus amplis, segmentis patentissimis, sepalis subcoriaceis, ligulatis, acutis, margine leviter undulatis, lateralibus brevioribus, falcatis; petalis membranaceis, sepalo dorsali aequalibus et duplo latioribus, oblongo-rhomboides, obtusis et minute apiculatis, margine satis undulatis; labello satis coriaceo, sepalis lateralibus paulo brevioribus, profunde trilobatis; lobis lateralibus elongatis, ovato-lanceolatis, acutis, columnam involventibus; lobo terminali amplo, longe unguiculato, limbo transverse reniformi-subrotundato, profunde emarginato, margine tenuiter denticulato et crispato, ntus subtiliter velutino et venis numerosis reticulatis leviter prominentibus paulo granulosis notato; columna claviformi, triquetra, satis incurva.

C. Warscewiczii, but it owes to *C. granulosa* the form of the perianth segments, and especially that of the lip. The seed was sown on June 15, 1896, and the first bloom appeared in August, 1900. *A. Cegniana*.

ODONTOGLOSSUM ASPIDORHINUM, *Lehm*

This graceful and new species, described by its discoverer in the *Gardeners' Chronicle*, Sept. 28, 1895, is now flowering in several collections, and its blossoms well bear out Mr. Lehmann's description, that "this is beyond any question the most floriferous *Odontoglossum* yet discovered. Not only does every pseudo-bulb produce two flower-spikes at one time, but they do so for two and even three years in succession, a character which, though common among *Masdevallias*, has not yet been observed with *Odontoglossums*. It is therefore quite common to meet with comparatively small masses which are set with twenty to thirty flower-spikes at one time, and as many as thirty-eight have been observed on one plant." Good examples have been received from Major Joicey's gardens, Sunningdale Park (gr., Mr. Fred. J. Thorne), and from Joseph Broome, Esq., Sunny Hill, Llandudno (gr., Mr. A. C. Axtel). The slender curved sprays bear showy flowers, having yellow-coloured sepals and petals, marked with reddish-purple. The lip, which is large in proportion to the size of the flower, is pure white, with, in some cases, violet blotches. It is a very pretty and distinct species.

RODRIGUEZIA FRAGRANS.

This forms one of the prettiest of basket plants, producing its racemes of white fragrant flowers in profusion, generally in the spring and early summer, though the plant often flowers at other seasons of the year. It is of dense and tufted habit of growth, and the white flowers, with yellow keel down the centre of the lip, being arranged all round the basket or Orchid-pan in which they are growing, look very attractive. Being evergreen they require but a slight diminution of the quantity of water afforded, and a lower temperature when growth is fully completed. A plant of this species is flowering well with Captain G. W. Law-Schofield, New Hall Hey, Rawtenstall (gr., Mr. Shill), who forwards an inflorescence of a very fine form of it. The genus is known in gardens as *Burlingtonia*.

FOREIGN CORRESPONDENCE.

THE GREAT FLOWER SHOW AT VERSAILLES.

THIS has been a year of flower shows in France, or more particularly in Paris and its environs; and the incessant calls on the resources of the French nurserymen must have almost depleted their nurseries. The Paris Exhibition has been more or less of a permanent flower show, and yet the great exhibition which opened at Versailles on Saturday, September 1, and continued on Sunday, Monday, Tuesday, and Wednesday, of this week, proves that the exhibition has not monopolised all the interesting things. The beautifully-wooded grounds of the Palace at Versailles are admirably adapted for floral exhibitions, the fine old trees affording a most welcome shade in hot weather. The French do not organise big flower shows without calling in what may be described as adventitious aid to make them attractive to the ordinary crowd of sightseers as well as to the specialist. In connection, therefore, with the show at Versailles, not only have concerts been organised, but on Sunday the invariable attraction of *grandes eaux* (which cost the government or municipality from 8,000 to 10,000 francs on each occasion) was announced, and, on the same day, M. Georges Bellair, gardener-in-chief of the Park and Orangerie was on the programmes for a *conference-promenade*, and on Monday M. Léon Duval, the well known horticulturist of Versailles, was down

for a similar conference. The show, it may be mentioned, was organised by the Société d'Horticulture de Seine et Oise.

PLANTS AND FLOWERS.

The centre of attraction of the exhibition was, of course, the large tent, in which one might wander for a week and find much to interest and to instruct. The whole arrangement was designed with great skill, and carried out with excellent taste. The horticultural establishment of M. Alexandre Rouland, of Versailles, was especially in evidence, and deservedly won a number of silver medals, his splendid bower of Ferns and their exhibit of noble Palms exciting general commendation, whilst his displays of Asters and Roses each received a medal, as did also a huge arrangement of pot plants and cut flowers in the shape of an immense basket, which demonstrated the extreme "pliability," so to speak, of cultivated plants and their decorative possibilities. A fine centre bed of MM. Duval et Fils, also of Versailles, won a Gold Medal, and included among some choice specimens of Palms and other ornamental plants, *Heliconia aureastriata*, a variety of *Ficus elastica* with irregular margins of gold, and a lovely specimen of *Nephrolepis exaltata*.

M. Derudder, another well known Versailles nurseryman, did much to make the large tent a thing of beauty and a joy for the five brief days of its existence, and he carried off several medals; his bank of miscellaneous foliage plants contained a number of that most graceful table decoration—*Araucaria excelsa compacta robusta*, than which there is none more effective for the special purpose for which it is so largely grown in this country, although gas is fatal to its existence. The same exhibitor received also a second silver medal for a new plant, *Euonymus marginata alba*, the creamy gold of its leaves giving it a very distinct appearance. M. A. Truffaut, of Versailles, contributed two fine beds of decorative Palms and other plants. His small plants of *Araucaria excelsa* were especially well grown, and his collection of Ferns included a noble specimen of *Lygodium scandens* trained into a huge Pear-shaped formation, with seven shoots, perhaps not less than 10 feet in height. Also a fine series of *Crotons* which comprised nearly every conceivable form of coloration except white and black. M. Truffaut also sent a small collection (for which he received the large gold medal), of *Nepenthes* which were admirably grown, and which included *N. Mastersii rubra* and *N. Annerleyensis*. A second display of *Nepenthes* to which a gold medal was also awarded, was sent, from the gardens of M. Robert Lebandy, of Bougival, and in this exhibit quite the most notable specimen was *N. Mastersii*, with pitchers perhaps 9 in. in length. The exhibits of *Caladiums* were especially interesting, a fine bed of them being sent by the gardener of M. E. Thelier, to which a gold medal was awarded; whilst those from M. A. Chantini, Paris, should also be mentioned. M. J. Welker, of La Celle, St. Cloud, received a silver-gilt medal for a small collection of *Montbretias*, with some very richly-coloured forms, and a small gold medal for a bed of *Begonias*, single and double. The cut *Gladioli* spikes, and the *Cannas* of M. Millet, of Bourg-la-Reine, and the bank of Asters of M. Mondain, of Versailles, were honoured with medals; and the bed of Palms, Ferns, and other plants of M. Benoit, received a Silver Medal; the show of *Begonias* from M. E. Coutis received a similar award. Especially noteworthy was the collection of fifty varieties of "picture trees," which received a large Gilt Medal, and were exhibited by a nurseryman whose name did not appear, and in which *Acubus*, *Euonymus*, and *Ilex* played the most conspicuous part. Another exhibitor—an amateur—whose name did not appear, at all events when the exhibition was opened on the first day, received a large Silver Medal for a spirally-trained plant of *Vanilla planifolia*, which carried no fewer than forty fruits. The cut Roses, with a bedding of moss, obtained for M. Lecointe Amédée a large Silver-gilt Medal, who received other medals for other exhibits. To another exhibitor, whose name

I could not discover, was awarded a small Gold Medal for a magnificent specimen plant, very cleverly trained, of *Lithrobroschia platyphylla*, 10 feet high; an amateur, whose name also did not appear, sent a wonderful show of *Platycerium grande*, chiefly arranged on an upright arrangement of virgin cork, with seven arms or branches on either side; this exhibit included also several small pots, under glass, in which the spores of this plant were seen just starting into life, and also plants which ranged from the size of a shilling to others of two years' growth, the Silver-gilt Medal awarded to this exhibit was exceedingly well-deserved. Special mention may also be made of an exhibit of *Abutilon Savitzi*, which, with its creamy-green foliage, received a Gold Medal; of M. Georges Truffaut's huge heads of *Chrysanthemums*, of which the primary object was to advertise not so much the flowers themselves as the manure with which they which they were raised; and also of an Orchid novelty which received a Gold Medal, sent by M. Charles Maron, of Brunoy: it is a cross between *Lælio purpurata* and *Cattleya gigas*, and is named *Lælio-Cattleya Madame Georges Halphen*, the rich satin purple of the throat renders it a most lovely flower. Mention should also be made of the effective waterfall, with rock-work decorated with Orchids, erected by M. L. Pérégo, of Paris-Passy, to which a small Gold Medal was awarded.

Although not all the floral exhibits were confined to the large tent, they may be briefly grouped here. M. A. Graverau, of Neauphile-le-Château, staged a splendid series of *Gladiolus*, chiefly of *gandavensis*, to which, as he was a member of the "jury," no prize was awarded, but in which there were several novelties, notably "Le Colosse," a deep red, with white satiny throat; there were numerous varieties of English origin. Two other exhibits of seedling *Gladioli* received medals, but the names of the exhibitors did not appear. A very fine show of *Dahlias*, by an amateur grower, received a Gold Medal, and included the beautiful dark purple "Bragg," the larger flower variety of the same colour, "Papa Charma," and the lovely pearly-white "Perle de la Tête d'Or"; these were chiefly arranged in star-shaped formations of seven flowers each. The various arrangements of cut flowers of Madame A. Simon, Versailles, and of M. Wagarine of the same place, received medals, and were for the most part in very good taste.

FRUIT AND VEGETABLES.

The French have no rivals in the skill and ingenuity of their methods of fruit and vegetable culture, and the display at Versailles was uncommonly varied and interesting. In a composite way, the honours of the exhibition were carried off by the École d'Horticulture of Igny (Seine et Oise), whose exhibits were on a large scale, and who received several medals. Their Pumpkins included one nearly as large as the wheel of an ordinary cart, and their Gourds comprised several which might have served as the Club of Hercules. Their Potatoes especially made a fine show. Their Tomatoes varied from the appropriately named "Cerise," which is not larger than a Cherry, to a variety of the size of a small Turnip. The same exhibitors' table of Pears included the huge and luscious-looking Docteur Jules Guyot. M. Desaine, Bougival, received several gold and other medals for similar exhibits; for Grapes a medal was awarded to M. Gustave Chevillot, of Thomeray; and another went to MM. Gayeaux & Clerc, of Paris, for the show of vegetables grown from their seed.

One of the most interesting exhibits was sent by M. G. Compoin, of St. Ouen, and included bunches of cut Asparagus from the fine form which originated at Argenteuil, or is known by the name of that place, down to the small green varieties which are known in England. M. Compoin told me that he has 45 hectares entirely devoted to the cultivation of this vegetable, and that he has been established at St. Ouen for thirty years. His establishment produces Asparagus heads nearly all the year round.

M. E. Pidoux, of Pornichet (Loire Inf.), received a Silver-gilt Medal for his exhibit of Strawberries, of which he has about 6 hectares under cultivation, chief of which are St. Antoine de Padoue, Oregon, Jeanne d'Arc, and the most fruitful bearer of all, Léon XII.

In conclusion, I cannot pass over three highly interesting volumes exhibited by the Ecole d'Horticulture "Le Notre," of Villepreux (Seine et Oise). These consist of dried specimens, carefully mounted and labelled, and the titles of the three volumes indicate the nature of their interest:—1, Maladies

serted into the base of the corolla. The species delineated in our present issue (fig. 53) is from a plant obligingly furnished by W. E. Gumbleton, Esq., Belgrove, Queenstown, who obtained it from Herrn Max Leichtlin, of Baden-Baden.

The plant was collected in the Sierra Nevada, California, by C. A. Purpus, from whom Mr. Leichtlin purchased it. It comes near to *A. princeps*, but the flowers and heads are larger. The plant flowers, and is perfectly hardy at Baden-Baden. It should prove a pretty addition to hardy herbaceous plants.

garden Marigold they appear almost different plants altogether. Like all flowers they require a little attention in order to give complete satisfaction. Thus, I have found it convenient to sow the seeds not in the borders they are wanted to adorn, but in nursery lines early in April, whence they are transplanted at the end of May into the position they are to occupy during the season. Transplanting has the good effect of inducing a less rampant growth, and a more floriferous habit. The summer treatment consists in removing all seed-capsules, and in keeping the plants within bounds



FIG. 53.—*ASCLEPIAS HALLI*: EX HORT. MAX. LEICHTLIN IN BADEN-BADEN; WITH DETAILS OF THE ANTHERS, POLLEN MASSES, AND THREE DIFFERENT VIEWS OF THE FLOWER. COLOUR OF FLOWERS DULL PINK.

(The specimen sent for figuring was obligingly furnished by Mr. Gumbleton.)

des Plantes d'Ornement; 2, Maladies des Arbres Fruitières; and 3, Maladies des Plantes Agricoles et Legumes. These volumes are the work of MM. Potier, the Director of the school. W. Roberts.

ASCLEPIAS HALLI (*Asa Gray*).

THE *Asclepiads* are a numerous order of herbaceous plants or shrubs, almost always milky, and often climbing. Leaves entire, opposite, sometimes whorled, having ciliae in lieu of stipules. The flowers are mostly arranged in umbels, in fascicles, or racemes. The calyx is five-divided and persistent; corolla also five-lobed and deciduous; stamens five-in-

CONCERNING MARIGOLDS.

For certain purposes these somewhat lightly-esteemed plants are quite indispensable, as for example in schemes of yellow where that colour passes into orange, they may safely form the backbone of the arrangement, other plants being more or less sparingly employed for filling up. There are now good strains of lemon-coloured and of deep orange Marigolds, with large full flowers, in form and size not unlike reflexed *Chrysanthemums*, that are of great value for summer and autumn flowering. These are greatly superior to the fancy strains such as Meteor and Le Proust, though I grow these also, and as compared with the common old-fashioned

by trimming any over-vigorous growths at intervals as required.

To associate with these, both French and African Marigolds are meritorious. They have somehow become associated in country districts altogether with flower shows, and their usefulness in adding a charm to the pleasure garden has perhaps on that account been largely overlooked. No doubt many dwarf forms of the French Marigold (*Tagetes patula*) are cultivated for effect, but the old-fashioned forms are left severely alone. This is a mistake, because in the kind of gardening I have in view, a mass of colour-mixture, with no clearly-defined gradations, this tall-growing, straggly plant, now with single blooms, and as often with

double, in yellow, brown, or striped with both, is more effective than any of the low-growing varieties. They are almost as easy to cultivate as the common Marigold, the only difference being that the French Marigold is sown in April in a cold frame on a prepared bed of light soil, and by the end of May the seedlings are sufficiently vigorous to bear transplanting directly into the border to bloom. African Marigolds (*Tagetes erecta*) are accorded a different treatment; this is rendered necessary because of the impossibility of procuring a strain that will yield more than about 50 per cent. of good double flowers; and though a few of those composing the other fifty may not be wanting in prettiness, the plant as a whole cannot be depended on to place without selection in any arrangement where good effect is everything. Fortunately, the plants bear transplanting at any stage of growth, so instead of setting them out into the borders from the frames where the seedlings are raised in the same manner as the French Marigold, they are dibbled into nursery lines at 15 inches apart each way, the ground chosen for their reception having first been prepared by the addition to the surface of a 2-inch layer of leaf-mould, which promotes the production of surface roots, and renders the process of lifting and transplanting easier and less liable to irritating losses. The time to transplant is when the first bloom on each plant has expanded, which is generally early in August. The work should be carried out after noon, and the soil and balls of the plants well moistened with water directly the plants have been set; no bad effects follow, but instead a dwarfer growth is promoted. None of the flowers should be allowed to remain to produce seeds, which weakens the plant and lessens the size of the later blooms.

I think it is Parkinson who affirms that blooms of the African Marigold, when cut, will continue fresh, with the stems in water, for a period of two months. I often employ all the Marigolds as cut flowers, but never noticed this peculiarity. They are, however, not to be despised for vase furnishing, the striped forms of the French Marigold, loosely arranged, with long stems, buds, and foliage, being most effective. Their scent is, unfortunately, not of a kind to be sought after; but it is by no means of so dreadful a nature as the earlier herbalists conceived it to be, for by their own account they were afraid to inhale it, and the juice was thought to be as deadly as that of the common Hemlock. Both species would appear to have been introduced into Europe at an early date, and as it was thought, from Tunis, whence came the name, "African Flower," applied to each. Hill, of English writers, first mentions the French Marigold under the designation "Petilium floure," but the plant itself was not known to him. Lyte describes the African and French Marigolds very fully, and it is plain that both were in cultivation in England when he published in 1578, the last name being used as a distinguishing term by which, as Gerard affirms, they were "vulgarly" known. At the time Parkinson wrote, several distinct forms were already cultivated, including the African, with quilled florets, which still distinguish a high-class strain, with lemon-coloured flowers.

A few years ago a very charming plant, said to be a hybrid production from *Chrysanthemum segetum* or Corn Marigold, and called "Princess May," was introduced. It had, unfortunately, a tendency to go all to flower, and cuttings were consequently difficult to produce. This year I am glad to see among our border flowers a plant exactly like "Princess May," which was produced from a packet of seed kindly sent by Messrs. Carter & Co., and which they name "Rising Sun." We have nothing like this in its soft gradation of yellow coloration, and both for border furnishing and for cutting we may look forward to the strain becoming popular. It is quite hardy, but requires the blooms as they set for seed to be regularly removed in order to preserve the plants in a floriferous condition. B.

NECTARIES ON THE BRAKE FERN.

At a recent meeting of the Torrey Botanical Club, Professor Lloyd called attention to the occurrence of nectaries on the leaves of *Pteridium aquilinum*. The glands are found on the rachis, one below the insertion of each pinna, and may be recognised as modified oval areas covered by a dark red epidermis. The colour is due to the presence of matter dissolved in the sap, and is found also in lines running up and sometimes down the rachis from the glands. These are very active during the rapid growth of the frond, their activity ceasing on the attainment of maturity. The secretion, which is very abundant, is formed independently of bleeding pressure, and the fluid is thick and syrupy. So rapidly does it accumulate that one may notice the increase in the size of the drops with a hand-lens. The secretion escapes through modified stomata, similar in form to the water-stomata of *Tropæolum*. The glandular tissue beneath extends deeply into the cortical mass of the petiole; its cells are small and contain chlorophyll.

Small ants, and one honey-gathering dipterous insect were noticed visiting the glands; none was seen to be gnawed by the insects. As Francis Darwin observed, the plant has few natural enemies or none, and the interpretation must be sought in the internal economy of the plant, probably in connection with nutrition. The abundant excretion of sugar may be a carrier of or an accompaniment to the excretion of some harmful substance. It is noteworthy that up to the present time no other pteridophyte has been reported to be possessed of nectar-secreting organs. The plants on which the observations were made grew near Bantam Lake, Litchfield, Conn. *American Gardening*, August 11, 1900.

THE BULB GARDEN.

EURYCLES CUNNINGHAM

A VERY good form of this Eucharis-like bulbous plant, popularly known as the Brisbane Lily, has recently flowered here. The leaves are generally produced in pairs, and have oblong, laxly-veined blades, a foot long, and 8 inches wide, borne on very long, stout petioles. The pure white flowers are produced before the leaves, and are borne in an umbel of twenty or more on a long, cylindrical, tapering scape. Each consists of a cylindrical tube, suddenly dilated into a cup-shaped perianth-limb, the lanceolate segments of which are elegantly waved and twisted. A small, funnel-shaped staminal cup occupies the centre of the flower, and is surmounted by two long teeth between the free ends of the filaments. The flower measures 2 inches, and resembles that of *Pancratium canariense*. The inflorescence is exceedingly delicate and pretty, and the individual flowers are suitable for button-holes, and all those purposes to which the Eucharis is put. The plant can be grown in the warm greenhouse, but it does far better in the stove, the flowers produced there being of twice the size, and in far greater number. It requires a compost of leaf-soil and loam, the former preponderating, and plenty of water when growing. It is a native of Eastern Australia. It is figured in *Bot. Mag.*, t. 3399.

POHLIA PLATENSIS.

A plant that is undoubtedly a *Cypella*, and close in its characters to *C. plumbea*, has been distributed under the above name by several continental nurserymen this past year. Bulbs of it, procured from Messrs. Herbe & Wulle of Naples, have flowered in these gardens recently. It is a tall Iridaceous plant with few lanceolate, plicate leaves, 1 foot long and 1½ inch wide; the flower-spike is stout, branched, 3 feet high; and bears numerous rich azure-blue flowers 3½ inches across. The blades of the outer segments are drooping, the inner segments are smaller, heavily tipped with

white, with a faint yellow median line extending to the base. The centre, or basin of the flower, is mottled yellow and brown, as in *C. plumbea*. It is a better plant than the latter, from the gardener's point of view, on account of the greater number and richer colour of the flowers; though individual flowers have the same fugacious character—lasting but a single day. The plant is described by the vendors as hardy, but most of these things require, to be quite safe, to be lifted and stored during the winter in sand. It is closely allied to and succeeds under the same kind of treatment as that afforded *Tigridias*. Potfuls of, say, a dozen bulbs are useful for conservatory decoration, a display of several flowers daily being kept up for about a fortnight.

CRINUM GIGANTEUM.

I have before alluded to this fine garden plant in these columns. A large specimen has flowered here (Isleworth) for the fourth time this year, yielding an aggregate of thirty eight flowers, which I think is a very unusual number for the plant under cultivation. The flowers are white, with green tubes, and are suitable for cutting for table decoration and for placing in vases. They are fragrant, especially towards the evening, when they expand to their fullest extent. The plant is easily grown. *Geo. B. Mallett*.

FORESTRY.

AVENUES.

PROBABLY the most important points in an avenue next to the condition of the trees, are length and breadth. The former determines its ability either to add to the attractions of an approach, when of suitable length, or to convert it into a monotonous and apparently never-ending drive when too long. Its breadth, again, may almost be said to determine its existence as an avenue at all, for we have all of us seen the distance between the two rows of trees so great, as to entirely destroy the effect they were meant to produce, and while retaining its formality, destroying the grandeur with which the height of the trees invests it, and which relatively decreases the further the latter recede from the observer's eye.

As far as its length is concerned, this will depend to some extent on the distance between the two points it is supposed to connect. But, considered as a feature in itself, we think that half-a-mile is long enough for any avenue, if we wish to avoid making the journey along it tedious and tiresome. As already pointed out, after once an avenue has been entered, the view presented to the eye remains much about the same, and it is only when one or other of the ends is approached, that the scene changes to any great extent. When the line runs through an extensive park, which can be seen between or beneath the trees of the avenue, a change of scene is afforded on either side; but the main or front view remains the same, and after a few minutes' ride or walk, the eye becomes satiated with its familiarity, and gradually becomes bored with what at first sight may have pleased. As a long avenue familiar to many, the Long Walk in Windsor Park may be instanced. The size of its trees, and the historic castle at one end, and the colossal statue at the other, render it an imposing and striking feature of the royal domain; but to tramp along its whole length merely for pleasure is a feat few would care to repeat who are able to appreciate natural scenery.

Had the hill, with its Copper Horse, been as near again to the Castle, this avenue, in my opinion, would have been a much grander sight than it is at present. This may, perhaps, be a matter of opinion, but in a world where size is only relative, it must be allowed that a disproportionate length only tends to dwarf the accompanying height and breadth of any object, and proportion is an essential feature in matters connected with taste.

The most attractive and successful avenues are

frequently those of only a few hundred yards in length, such as may be found connecting some old Elizabethan manorhouse standing in a few acres of ground, with the adjoining village or public road. In such a position, it invests the approach to the house with a dignity it would not otherwise possess, and the house itself with additional importance by hiding from view out-buildings, and boundary-

kind. The distance is too short to enable the visitor to be decoyed into a winding and circuitous road through the grounds, while a piece of straight road through ordinary park land or shrubbery rarely looks well. But when bordered by a stately avenue, it does away with that villa-like aspect which short drives of this kind often convey, and carries with it a greater idea of importance. Of

and the avenue in this case merely becomes the background to the turf, and fulfils much the same function as a tall hedge, and loses its more characteristic appearance. But in avenues of the usual kind, a distance between the two rows of more than 40 yards in long, or 20 to 30 yards in short avenues, tends to dwarf the trees and reduce the desired effect.

With too narrow a margin, the trees, if at all of a spreading character, are apt to meet overhead, and the effect, though pleasing enough in its way, is not exactly what is looked for in an avenue. No hard-and-fast rule seems to have been observed in the past as to either the length or width of avenues, for we find the latter varying to as great an extent as the former; but much of this is probably due to the fact that in avenues, as in many other things, the real object in view is not very clear to those engaged in carrying out the work. *A. C. Forbes.*

(To be continued.)

BROCCHINIA CORDYLINOIDES.

IN our issue for August 21, 1880, we gave an illustration of a Guianan savanna, in which *Brocchinia cordylinoides* formed the chief part of the vegetation. The plant has the general aspect of a *Fourcroya*, leaves broad, semi-pendant, supported in old plants on short, stout stems; the inflorescence is three or four times as long as the leaves, and the lower branches of the decompound panicle are more than 2 feet in length. Mr. Everard im Thurn, who kindly furnished the photograph from which our illustration was taken (fig. 54), affords the following particulars concerning this plant:—

"The enclosed photograph of a plant of *Brocchinia cordylinoides*, which has recently flowered in my dear old Guiana garden (now a thing of the past) may interest you. The plant, which was first discovered by me, grows on the rocks at the Kaieteur Fall and at Roraima. The plant in the picture in one which I brought in a very small state from Roraima in 1884, planting it first in my garden on the Pomeroon, and then removing it when it was already pretty big to my later garden on the Barima. It has flowered this year."

SELECTION.*

BY HENRY L'EVEQUE VILMORIN.

(Continued from page 165.)

APPLICATION OF SELECTION.—If plants did not vary there could be no selection. The object of selection is to establish, fix, and sometimes to develop in plants certain qualities or new peculiarities which a plant has shown, and someone has noticed.

It is not difficult to select plants. Anyone can do it, but it is not so easy to do it profitably. In order to succeed, one must be not only patient, attentive to the work in hand, but must also exercise judgment and common sense. Every modification that a plant shows is not necessarily worth fixing. Experience alone can tell whether it is worth perpetuating. The Chinese *Priurose* is one of those plants that within a short space of time—that is, within fifty or sixty years—has produced a very great number of good varieties under the influence of selection. It seems that any new character that appears in these plants is easily established. Several times I have found in cultivation, both at Paris and in the Riviera, certain bordered flowers—that is, flowers having a lighter-coloured border around a deeper-coloured disk—but all of my efforts to fix this pretty variation have thus far been in vain.

When a variation in a cultivated form is noticed, one should ask himself first whether it is worth fixing; for it is very evident that it would be time and labour lost if anyone should devote himself to the fixation of a character having neither interest nor usefulness. Several years ago a gardener brought to the writer a plant of a new *Celery* that he had happened to find in a seed plot. He had transplanted it, saved the seeds from it, and sowed them, with the result that the type was reproduced very faithfully. It was a *Celery* in which the petiole or leaf-stalk was shortened almost to the point of disappearance. The many crowded leaves spread over the ground in a compact rosette, but the plant had practically lost the very part that made it useful as a vegetable—that is, the stalks. I told him so, and did not conceal from him the fact that his novelty appeared to me to mark a step backward and not forward, somewhat as if one had discovered a *Potato* without tubers. I could not convince him that his novelty was not a fine thing, and I believe he actually found a house that introduced it into the trade among their

* *Experiment Station Record*, Washington, D.C., U.S.A.



FIG. 54.—*BROCCHINIA CORDYLINOIDES*: AS IT GREW IN MR. EVERARD IM THURN'S GARDEN ON THE BARIMA RIVER.

fences, which would reveal the actual extent of the property. Usually planted with Elms or Limes, these avenues in many instances still remain entire and in good health, although the houses to which they owed their origin have either disappeared, or have been turned into farm-houses, or even more humble uses.

In the same way, where the mansion stands close to the entrance gates, no better connection between the two can be found than a short avenue of this

course, much depends upon the style of the building to which it leads, but we must leave this question to those more competent to discuss it.

Much the same thing may be said about breadth as has been said about length. Proportion, again, should be strictly observed, and the longer the avenue the wider (in moderation) it should be. A great deal, however, depends here upon the style of the approach. In many places a wide sweep of closely-cut lawn borders the drive on either side,

novelties. If horticultural novelties were a rarity, one could realise that anything new would be received with eagerness, but, as a matter of fact, novelties superabound, and one is tempted to say that the greatest virtue of a plant-breeder is to be severe toward his own creations, and not easily to become enthusiastic over their real or supposed merits. Hence, good judgment and experience are necessary in order to decide, when a variation appears, whether it is worth propagating or not with a view to establishing a new variety in the course of time.

If, as is most often the case, there is but one plant that shows the modification, the only thing to do is to collect the seeds from it to be planted again. But even here there are certain precautions to be taken. If the plant is one of those in which cross-fertilisation takes place easily, it is advisable to remove the possibility of pollination by plants of the same kind which might be in the vicinity. There are two ways of doing this: one is to destroy all plants of the same kind except the one to be propagated; the other is to cover the flowers of this plant so that they are protected from the pollen of other plants. It is advisable, if the flowers have already begun to open when the variation is noticed, to destroy all those that might have been fertilised by the pollen of any other plant, as this would introduce an unknown parentage into the race.

For the sake of simplicity I shall first consider the commonest case, that of a plant capable of self-fertilisation, or one in which the different flowers of the same plant can fertilise each other, and do not require the aid of another plant of the same species. Seeds will then be collected only from those flowers which open after the plant has been covered. Suppose now that we have before us the seeds gathered from a plant that has shown the variation which we wish to propagate. The first thing to do is to sow these seeds in order to obtain a considerable number of young plants. The chances of finding something satisfactory among them naturally increases with the number of individuals among which we can choose. In this connection two important points are to be observed: (1) The inequality which is found in different cases in the proportion of plants conforming to the desired type in the first generation after the beginning of the selection. Sometimes, as has already been said, a single one is not obtained. Certainly this result is not encouraging; nevertheless this is not always an unqualified reason for abandoning the task to which one has set himself. Occasionally it happens that by gathering the seed from the plants of the second generation, the characteristics of the plant originally selected may reappear in the following generation.

Sometimes, on the contrary, the observed variation may reproduce itself completely and entirely in the first generation. This case is rare, but nevertheless it does occur. One day I noticed in a lot of double violet Clarkias, a plant with pure white double flowers. When gathered and sown by themselves, the seeds of this plant yielded only pure white flowers, which have never varied. The race was established in a single generation. Generally, however, the result is intermediate—that is, certain individuals show the desired characters, while others revert to the earlier form. We shall consider in due season the proper method of procedure in a case like this. Meanwhile, I must take up the second point to which I have already referred, which is: (2) The necessity of sowing the seed under normal conditions. By these, I mean conditions which are not such as will influence artificially the characters of the plant produced by these seeds. In other words, structural or other peculiarities which the plants show should be the result of their natural tendencies and not the artificial result of cultivation. In a word, the plants under observation must have the opportunity to show their defects as well as good qualities. It goes without saying that a selection cannot be useful and valuable unless so made. One must be in a position to decide that a plant behaves in a certain manner because it has an innate tendency to do so, and that it has not been constrained to a certain form artificially. An illustration will make my point better understood than many explanations. In selecting sugar Beets, those roots are sought for that are straight, long, and free from lateral branches. This is right, for those that are branched are more difficult, and hence, more expensive, to gather. Now, certain growers of Beet-seed in the north of France once formed the idea—thinking, no doubt, in this way to improve their varieties—of growing the plants which were to be used as seed stocks in very rich, deeply-worked soil, where they were very much crowded together; so much so that sixteen to twenty, or even more, grew on one square metre of ground. The result was that the Beet assumed the form, and later, the length, of a thick whipstock. They were not branched, because the roots were very closely crowded together. Their sugar content was abnormally high, as a result of their growing together, and the conclusions drawn from the form of the roots and their sugar content, as determined in the laboratory, were tainted with error because they did not represent qualities truly acquired, but modifications accidentally imposed by external conditions. Thus, these Beets, which were declared to be of good shape and composition in the laboratory, yielded seed which, when sown in the open field, produced branched roots of only moderate sugar content, because the descendants had resumed their true characters when they were released from the restraint which had been artificially imposed on the parent plants. Those Beet, alone, may be considered unbranched that are free from roots when they are cultivated under conditions that would permit them to become branched if they had such a tendency. In order to obtain seed that will produce unbranched roots, the plants from which the selection is to be made must be grown under conditions as

nearly as possible like those under which the same kind of plants are commonly grown that are intended for common domestic or industrial uses.

Let us return to a consideration of the successive operations of selection. Suppose that we have before us a lot of plant's grown from seed of the plant which forms the point of departure in the establishment of a new variety. Of these plants some are *true to type*—that is, they reproduce faithfully the characters which we desire. Others have reverted to the older type, and we destroy them. We also destroy those which correspond only imperfectly to the ideal which we have set before ourselves. Let us suppose that the tenth part of these plants are true to type, and that we have twenty satisfactory plants before us. There are then open to us two methods of procedure. There is the method by individual selection of single plants and that of individual selection by group lots. The former is much the more exact, more simple, more direct, and less liable to error. But it has the disadvantage of being slow of operation, for at the end of three or four generations the grower still has only the seed produced by a single plant, and two or three years are still required to produce a large enough stock to introduce it into trade.

The method by group lots operates more rapidly and at the same time affords a considerable probability of establishing the variety. It consists in selecting not a single plant, but as large a number of perfectly satisfactory plants as can be found by individual examination of all the plants in the lot. These plants are grown together, the seeds are collected in one lot, and are planted the following year (if the plant is an annual) in order to obtain a larger number of plants, from which a larger number of individuals may be selected than in the preceding year, thus providing a good quantity of the seed of the improved race in a short time. The weak point in this method is that that one does not know in what manner each individual plant has reproduced itself, so that in selecting a good plant one does not know that it was not derived from a parent that produced only 5 or 10 per cent. of seed of the improved variety, the other nine-tenths reverting to the earlier type. This may happen and, of course, hinder the complete differentiation and establishment of the race.

There is a method that may be said to be intermediate between the two already described, which embraces, to a great extent, the advantages of both without their disadvantage. It is the method of seeding by single plants. This method requires somewhat more labour and attention. It is as follows: In the first generation, from the original plant, instead of selecting only one individual, as in the first method, several are chosen, all of them perfectly satisfactory in appearance, but instead of sowing them together and collecting the seed in a mixture, as in the second method, each is grown sufficiently far away from the others to avoid cross-fertilisation, and the seed from each plant is collected separately. Each lot is again sown separately the next year, and when the time comes to make a selection, the first step is to note to what extent each of the lots thus obtained has faithfully reproduced the characters of the plant from which it is sprung. (For the sake of clearness and convenience, each plant selected receives a number or letter by which it is designated and its pedigree may be followed.) A great difference is generally noticed in the behaviour of the different plants in respect to the transmission of their characters. Those that do not reproduce the desired characters are entirely rejected. If any are found, as often happens, that produce entirely those of the parent plant, such plant or plants only are preserved, and their descendants may be used immediately for the multiplication of the new variety, which is thus established with a constancy that the best horticultural varieties do not always possess.

This process of seeding by individual plants is one of the most powerful means which the plant-breeder possesses to establish with certainty and relative quickness new varieties of cultivated plants. About twenty years ago I applied this method to the improvement of Sugar Beets, a work that was begun by my father in 1850, and that I have made one of my principal lines of business for twenty-five years. In the laboratory of Verrières, as everywhere else at the present time, the roots of the Sugar Beet are submitted individually first to a physical selection as to size, form, colour, &c., then to an examination by the polariscope for their sugar content. After this the most perfect roots are replanted, and the seed from each one is collected and kept separate, but still before using this seed for the multiplication of the variety on a large scale, those plants must be determined which, besides their own characters, are endowed with that special quality which consists of faithfully transmitting those characters to their descendants. A small sample of the seed from each root, enough to produce about fifty plants, is sown the next year. The roots produced are examined physically and chemically at the laboratory in the usual manner. If the result of the test is unfavourable, the rest of the seed is thrown away; but if the test is favourable—that is, if the roots from which the seed was produced have demonstrated that they reproduce and transmit faithfully to their descendants the qualities for which they are chosen—the rest of the seed is sown with suitable care so as to obtain as great an increase of the variety as possible. Now, it is a fact of observation that individual plants or animals are very unequally endowed in this respect. I have already referred to this fact when I mentioned the case in which a new variety is established in a single generation. In an article on heredity, written in 1856, my father has so well presented this matter of the varying ability of individuals to transmit their own characters, that I can do no better than quote the entire passage.

"An example drawn from the animal world will make this

idea clearer. Suppose two stallions, eminently remarkable for eight characteristics, the same for both. Let the first of these characteristics be that of a fine head and shoulders, with the head shapely and well poised. We will not mention the other characteristics, which are of no importance to our argument, and pass directly to the eighth. Let this eighth characteristic be that of being a good stallion; and, since we are only making a supposition, we will define this by saying that it consists in the ability to transmit to descendants seven-eighths of his own characteristics. Now let us advance one generation, and consider two male offsprings of these animals. The first has transmitted seven of these characteristics, but he has not transmitted the first; hence, this colt will have a head that is too large, badly poised, and he will not carry it well; but, as he has received the quality of being a good stallion, he will transmit with tenacity to his descendants his unshapely head, compensated, however, by his other good qualities. Let the offsprings of the second stallion, on the other hand, possess all the visible characteristics of his father, and be to all appearances, a fine horse. But he has not received the eighth quality. In the second generation he will show his great defect. His offspring will have no common family resemblance and all the fine qualities which he received from his sire will thus be lost to the further improvement of the race. This ability to impress a very pronounced character on their offspring, which certain stallions possess to a much higher degree than others, is a fact well known to those who devote themselves to the improvement of domestic animals; but it is not generally known that in the plant world this fact is even more pronounced—so much so, that certain plants endow their descendants with such prepotency, that a race, equivalent almost to a species group, is formed at a single leap, while at other times thousands of individuals may be raised from a plant showing some noticeable peculiarity without a single one of them reproducing the distinctive trait of the parent. But as this ability to transmit a specific character is not indicated by any external characteristic, and the result alone reveals its existence, it becomes necessary to be able to eliminate from the second generation all of the descendants of a plant imperfectly endowed in this respect; and for this reason I have been led to make it an absolute rule to keep the seed from different plants separate and not to mix the seed of two plants intended to be used in improving a race, no matter how perfect and how much alike these plants may appear."

When, after two or three generations, it is seen that the new variety is not becoming constant, that at each generation the reversion to the old type or variations in all directions are still found, it is better to abandon the selection entirely, or rather, cease to apply it to this lot, which is possibly lacking in the ability to transmit acquired characters, and to seek another point of departure in another individual better endowed in this respect.

(To be continued.)

FLORISTS' FLOWERS.

PINKS.

THESE plants may be lifted and potted in large 48's at this season, and they will, if well attended to, be found useful for furnishing flowers in the spring months. They should be carefully lifted, a good proportion of the soil about the roots being preserved. I pot my plants in light sandy loam of good quality, potting firmly. When the plants are potted they are stood in a shady place on sifted coal-ashes and afforded water. If the weather proves dry, they are syringed three or four times daily till they have recovered from the disturbance, when I place them in a sunny position. Pinks are not good early forcers, the whole plant dwindling and getting drawn; but when wintered in cold frames with plenty of air afforded, the first batch may be placed in a newly-started vinery or Peach-house in January, standing the plants on shelves close to the glass.

MARGUERITE CARNATIONS.

Our plants which were raised in the spring of this year and transferred to the open ground for the purpose of being potted-up at this season, are now sturdy and well furnished with shoots. Although the flowers will not be as early as those on plants grown in pots, still they are very useful. By planting-out, a good deal of labour is saved in affording water at a time when the pressure of work is greatest. If the soil at the time of lifting is dry, afford it water copiously, and then lift carefully and pot-up, using 48's and 32's. The little quantity of soil that is required is pressed moderately firmly into the pots, and water afforded copiously at the finish. They are then stood in the shade for about ten days, or if there is much rain they are placed under glass instead,

until re-established. A few plants placed in moderate heat at intervals will keep up a succession of bloom for many weeks, if not coddled or kept in crowded, shady houses. *H. Markham.*

PRUNING GOOSEBERRY-BUSHES.

THE Gooseberry is a fruit which repays a good deal more care than it usually gets. Sometimes the bush is left entirely to itself, when it becomes a perfect thicket, and small fruit and scratched

least twice as much young wood as can or should be left. The consequence is, the bush is using its strength in maturing so much useless wood, instead of concentrating it on just that wood which is to be left for next year's bearing. In the latter case, of course, the young shoots have a better chance to become strong, and get more sun and air to ripen them.

Next, as to the method of pruning. It is this season's growth which bears the best fruit next year, and the aim is therefore to leave as much of

bush may look rather thin after being pruned so severely, but when the spring growth takes place it will be quite thick enough, and the result will be that the bush will make much stronger shoots for the succeeding year's fruiting, resulting of course in bigger fruit.

If caterpillars are troublesome, burn all the cuttings as soon as possible, and sprinkle lime under the bushes, and hoe it in. *Alger Potts.*

POLYGONUM SCANDENS (?).

IN the course of the present summer, the Polygonum shown at fig. 55 was exhibited by Messrs. James Veitch & Sons. The plant is of climbing habit, and the somewhat leathery leaves are dark green above, claret-coloured beneath. Some referred it to *P. chinense*, but it seems widely different from that species. In any case, it is a handsome, and presumably hardy, twining plant. It is near to *P. scandens*.

THE WEATHER IN WEST HERTS.

TEMPERATURES have varied considerably during the past week. On the warmest day the highest reading in the shade was 73°, and on the coldest night the exposed thermometer fell to within 4° of the freezing point. The changeable character of recent temperatures above ground is shown by those beneath the surface at the present time—the reading at 2 feet deep being about 1° warmer, whereas at 1 foot deep it is about 1° colder than is seasonable. On the last day of August rather more than a quarter of an inch of rain fell. As previous to this the weather had been dry for a week, this amount in no way affected the percolation gauges. Indeed, no measureable quantity of rain-water has come through the bare soil gauge for more than a fortnight, and none at all through that covered with short grass since the heavy thunderstorm of July 16. The record of sunshine was poor, the average duration being less than three hours a day, instead of about five hours a day, which may be regarded as seasonable.

AUGUST.

There occurred about ten consecutive warm days in the middle of the month, otherwise the temperature ruled low. Taken as a whole, it was an August of about average warmth. On three days the shade temperature rose to or above 80°. There were scarcely any unseasonably cold nights, and on the coldest of these the thermometer exposed on the lawn never descended lower than 40°, which is the highest extreme minimum temperature that this thermometer has yet registered here in August. Rain fell on thirteen days, and to the aggregate depth of 3½ inches, which is about ¾-inch in excess of the mean for the month. The sun shone on an average for six hours a day, or for about a seasonable period. The atmosphere proved, as a rule, unusually calm; in fact, on about half the days in the month the mean rate of movement of the air was less than 3 miles an hour. There, however, occurred two remarkable exceptions to this rule, for on two days early in August the wind rose to the strength of a gale—directions, W.N.W. and W.S.W.—and did much mischief in my garden among the Dahlias and other plants insufficiently staked.

THE SUMMER.

In the last fifteen years there have been only two summers as warm, viz., those of 1893 and 1899; and yet, but for the great heat which prevailed during the last three weeks in July, the mean temperature would have come out in no way exceptional, as June was only moderately warm, and August of about seasonable temperature. The total rainfall, although only slightly in excess of the mean for the quarter, was heavier than in any summer since that of 1895, showing how very dry our recent summers must have been. It was a remarkably bright season, the sun shining for about 1½ hours a day longer than usual. *E. M., Berkhamstead, September 4.*



FIG. 55.—POLYGONUM SCANDENS (?): LEAVES PURPLE ON THE UNDER SURFACE.

hands in the picking of it are the result. Sometimes, on the other hand, they are cut all over so as to make a round bush, and nothing more. It would be difficult to say which is the worse practice. This article will deal only with the common form of bushes, as wall and espalier-trained trees needing rather different treatment. First, as to the time of pruning. The winter is the usual time, but unless birds are very troublesome in picking out the buds, the best time is certainly just after the fruit has been gathered. Think what happens when the bush is left to itself. There is at

it on the bush as possible. In thinning the bush after the season's growth, old wood should be cut out wherever it can be done without making a serious gap, or materially lessening the size in any direction, unless, of course, it has grown so big as to be in the way. The young growth should be thinned out so that it is possible to put the hand through the bush in any direction without getting it scratched. The long shoots of this season's growth which are left on should not be shortened except where necessary to preserve the shape of the bush or keep it in bounds. The

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt Tisbury, Gloucestershire.

Cauliflowers.—Those which were planted late in the month of June, will, unless heavy rains have fallen in the district, stand in need of copious supplies of water, failing which, the plants will "button" at the roots, and the crop prove a failure. Make a point of protecting the cord by turning down the heart leaves over the heads, or tying the leaves loosely in a bundle so as to shade it. Seeds of Cauliflowers for wintering should be sown forthwith, and again in the last week of the month. Two sowings are always advisable, as we can never forecast the weather, and in some years, the autumn being abnormally warm, the plants from the first sowing get of large size, and do not winter satisfactorily. The seed-beds should be situated on a south border to which some fresh loamy soil has been added when forking it over. When dug, let it be roughly levelled, then trodden evenly all over, and finally made level and firm. The seed (Walcheren for preference), should be thinly sown in shallow drills drawn at 14 inches apart, and covered with soil a little lighter than the staple. Put netting over the beds, and keep them moist. When large enough, prick out the plants into a cold frame at 5 inches apart, and afford air and light to the fullest extent, only putting on the lights at night, or when rain falls heavily. If the plants are to be wintered in cold frames or pits, prepare a mixture of loam three parts, leaf-mould one part, and a small quantity of farm-yard or stable dung, well decayed. Having selected a warm sunny spot for the frames, which should face southwards, arrange matters so that when the bed is finished it will not be more than 9 inches from the glass. First place a layer of finely-sifted coal ashes 2 inches thick on the soil, rolling this or beating it to a smooth hard surface, on which place the prepared soil to the depth of 3 inches. The coal-ash-layer is intended to prevent the roots of the plants straying far, and thus making it difficult to secure a compact ball of soil and roots when transplanting. The bed of soil should be made firm.

Cardoons.—These plants may run to seed at this season, unless water be copiously afforded till the earthing-up is carried out. Usually two sowings of Cardoon seed are made, and those of the first sowing should be well established in the trenches by this date, and may be therefore afforded manure-water alternately with clear water. Guano freely sprinkled on the soil in the neighbourhood of the plants is a great assistance to them.

Celeriac.—Given rich land, and plenty of water and liquid-manure, this root forms a very useful addition to the winter salad, and for cooked dishes. This treatment should be commenced forthwith, and continued so long as the plants are growing. If a mulch was not afforded early in the season, Guano may be applied now. Occasional and somewhat severe thinnings of the lowermost leaves, and the entire removal of the suckers, will increase the size of the tuberous roots.

Current Operations.—The store of decayed manure for use in the early winter trenching and digging should be turned and got in readiness for use. In doing this sort of work, the heap, if a large one, should be turned over in regular sections of 2 to 2½ feet, just as is done in trenching land which affords the workmen the opportunity of throwing out all undesirable rubbish, or that which is still undecayed. As it is being dug over to the very bottom, it should be thrown into a heap of smaller compass, and flat on the top. If it be made 3½ feet high it will be easy to estimate its cubical contents. The dung from corn-fed horses should continue to be collected for forming Mushroom beds under cover, spreading it out under cover if possible in moderate-sized heaps, and mixing and turning it at the least once a week, in order to dissipate some of its ammonia and moisture. At this season the dates of sowings or plantings are not of so much importance as the favourable condition of the land and of the weather. Still, after the end of August, it is not advisable to defer sowing or planting for more than two or three days beyond the usual date. Time should always be afforded to thoroughly cleanse, trench, and moderately manure every plot, however small the plot or evanes-

cent the crop with which it may be planted or sown may be. There is one thing to be observed in the treatment of light soils in times of drought: they should not be dug till the time has arrived for sowing or planting, otherwise the little moisture contained in the surface soil will be evaporated, the germination of seeds hindered, and the recovery of plants after root disturbance rendered tedious and slow, unless heavy rains fall, or much water is afforded artificially. Leeks required for culinary uses early in the month of November, should now be moulded up; and backward and successional crops be afforded liquid-manure occasionally in dry weather. Endives, where standing too thickly in the seed-beds, should be thinned partially, and transplantation carried out a fortnight afterwards.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

Bulbs for Forcing.—Prepare at once a sufficient quantity of soil for potting Hyacinths, Tulips, Narcissus, &c., as soon as these are received from the seedsmen. If a compost be made now, and placed in an open shed until required, or even outside if covered by shutters to throw off heavy rains, it will be in a better condition for potting, than if mixed as required for use. A suitable compost is one consisting of three parts fibrous-loam and one part well decomposed hot-bed manure, with plenty of sand added. All should be thoroughly well mixed, and if at all dry it may be watered. Hyacinths are most useful when potted singly in 5-inch pots. Place a flat piece of crock at the bottom of the pot, and some finer crocks over this; then cover with some of the more fibrous portion of the soil. Make the soil moderately firm by means of the hand, and put a little silver-sand under each bulb. After arranging the bulb, add some more soil around it until the point just shows above the surface. A rammer may only be used to make the surface soil firm. For early flowering the single varieties are more satisfactory than those with double flowers. Tulips may be potted up in groups of three, four, or five, in 5-inch pots. Varieties of Van Thol intended to flower at Christmas may be planted 2 inches apart in boxes, and be potted up when the flowers commence to show colour. If this be done, and the plants are placed in a moist warm atmosphere for a few days, they will suffer no check whatever. Three bulbs of Polyanthus Narcissus may be put in a 6-inch pot, but for conservatory decoration they are more effective if five or six bulbs be put into an 8-inch pot, according to the variety. In potting leave the tops of the bulbs slightly exposed. After potting-up bulbs, place the pots and boxes on ashes in a position out-of-doors, and give them a good watering. When dry, cover them about 1 foot deep with ashes or cocoa-fibre refuse. Before doing this, it may be advisable to invert a 3-inch pot over each Hyacinth, as these sometimes decay owing to damp settling in the crowns. After five or six weeks examine the stock, and remove those that are well rooted to a cold pit, where they should be shaded for a few days until the leaves have become green. They will then be in a suitable condition for removal to the forcing-house as required.

Border Narcissus or Daffodils may also be potted up now, and if treated in the manner described above, these may be had in flower during January and February in an ordinary greenhouse. The following varieties have large showy flowers, and are not expensive: N. Golden Spur, Ard Righ, Horsfieldii, Emperor, Empress, Golden Prince, Sir Watkin, and the common Daffodil (*Telemonius plenus*).

Chrysanthemums.—The continual application of water in dry weather to a certain extent exhausts the soil, and it will be well therefore to give the plants a top-dressing of cow-dung, or deer-droppings and loam in equal parts, after it has been passed through a sieve. Stir the surface of the soil with a pointed stick before adding the compost, which may be made firm with a rammer; sufficient space must be left for applying water. Late struck plants now in 6-inch pots should be moved to the sunniest place available, and be given ample space between each. Feed them regularly with animal manure-water, or with one of the prepared fertilisers, and turn the plants round occasionally to prevent them rooting through into the soil. Syringe them morning and afternoon when the weather is fine.

Bowvardias that have been planted in outside borders had better be potted up before the middle of this month. For this purpose use a light, sandy, fine soil, which should be carefully worked about the roots when potting. Place the plants in a pit where a night temperature of 50° to 55° can be maintained, and syringe, shade, and keep them rather close until they have become established.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Ilchester, Abbotsbury Castle, Dorsetshire.

Bamboos.—In the warmer parts of the country, and in sheltered spots in many south country gardens, the hardier species of *Arundinaria*, *Bambusa*, and *Phyllostachys* may be planted with safety, and the early part of September is a suitable date at which to plant. A very important point in the cultivation of these plants is the thorough drainage of the soil; and this being well carried out, any deficiency in regard to the soil can be supplied. Bamboos like a mulch of half-decayed leaves in the winter months, and, if necessary, some heavy turfy loam worked in carefully around them when vigorous growth is being made by the plants. A richer mulch than leaf-mould should be employed in the summer season. The proper kind of soil for the plants is a sandy, retentive loam, and it should not be less than 2 feet in depth. In such a soil the rhizomes do not travel widely, as is the case in light soils; moreover, the growth of the stems is more vigorous than in the latter, although there may be a greater number. An occasional thinning-out of the weakest canes should be performed after a plant has become established. The hardier species make good progress from the first; if they are pot-bound, the roots soon finding their way into the fresh soil, losing no foliage, which always occurs unless the greatest care be taken when divisions of the roots are planted. The best kind of compost to use when planting consists of leaf-mould, charred garden-refuse, and road scrapings. On finishing afford water to settle the soil. Whether water must be again afforded will depend upon the character of the weather. Young, and newly-planted Bamboos, should be supported by stakes, and have rabbit-proof wire protectors put round them.

The Herbaceous Perennials.—The flowerless shoots and seed-vessels of double and single-flowered Dahlias should be removed. Choice or new varieties of Dahlias may now be increased from the lateral growths cut with a heel, potting these into small 60's, and placing them on a mild hot-bed to form roots. Let the hoe be plied on the borders whenever the state of the soil will allow of it, and clear off the rubbish, burning this, and all dead and flowerless shoots, so as to destroy injurious grubs, &c. At this season a smother fire may be kept going in an out-of-the-way part of the garden for this purpose.

The Flower Beds.—When the required numbers of cuttings have been taken, let all spent flowers and decaying foliage be removed. If the soil is dressed with a small quantity of native-guano or other artificial manure, the plants will be kept in bloom until the frost comes.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Lælia purpurata and others.—The present condition of the young growths of *L. purpurata* is such, that any necessary repotting must be done without delay. Old plants are very liable to injury when there is any disturbance made at the roots, and the greatest care will be needed. Large specimens which have grown beyond their receptacles, and have next to worthless centres, should be divided, and the best pseudo-bulbs re-grouped together. For this purpose, crack the pot or pan, and by cutting the rhizomes, remove certain portions bodily. Pick away all decayed material, and then rearrange the pseudo-bulbs in a pot or pan of suitable size, and so dispose the growing points that some years will elapse before they reach the margins. The pots should be filled to three-parts of their depth with crocks placed edgewise. After arranging the plant, pack among the roots, and well up to the rhizomes, some good turfy peat, with a few patches of sphagnum-moss here and there. Small plants need not to be disturbed more than by cracking the receptacle, and removing those pieces to which roots are not adhering, cutting off the useless back

portion of the plant, and rearranging the plant in a pot a size or two larger than that from which it has been removed. *L. purpurata* usually thrives in the temperature and conditions of a Cattleya-house. The very moist condition of the out-of-doors atmosphere at this season increases the need for judicious ventilation, accompanied by a gentle heat in the hot water pipes. Discontinue spraying the plants overhead for the same reason, and take care, when watering or damping amongst them, that none lodge in the sheathing-bracts.

L. crispata having passed out of bloom, should be given a period of rest before it makes new growth, which it will be likely to do during the dull season. Water very sparingly.

L. Perrinii is a useful autumn-flowering species that will exist under very adverse conditions, but is difficult to cultivate successfully, owing to the peculiar downward tendency of the rhizome. A small quantity only of material may be placed about its roots, for although a frequent supply of water is good for the plant when it can pass away rapidly, a permanently saturated base is most hurtful. Well-drained receptacles must be used, surfaced with a thin layer of peat and a little sphagnum-moss. Rapid evaporation is necessary, and the plants ought to be suspended in the warmest part of the Cattleya-house, or placed where light and heat, in conjunction with freshly admitted air, can act upon them. Permit no water to remain lodged in the bracts.

Heating-apparatus.—Before these are urgently needed, the whole system above ground should be examined, in order to test and lubricate valves, repair slight leakages, clean smoke-stack, flues, &c. Vigorous firing will not yet be called for, but everything should be put in readiness for that event.

General remarks.—Every encouragement must now be given plants that have finished their growth, in order to obtain well-matured specimens. On every bright day expose them to as much light as is desirable, and ventilate the house freely when circumstances permit. Dendrobiums should not be permitted to remain in their growing quarters a day longer than is necessary. Unseasonable growths in Cattleyas should be bodily removed, or the plants be placed in the most favourable position for development. I prefer to remove such growth, and the second bud generally present will take the place of the leading one. A more careful and somewhat restricted system of damping will now be necessary, and less root moisture, or a fall in the temperature will induce over-saturation of the atmosphere, and disease in the plants. Only employ shading when the sunlight is too strong for the tenderest subjects.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Planting Bush Fruits.—Where new plots are to be formed, the ground should now be prepared. It will need to be deeply stirred, and liberally manured, particularly any that is intended for Raspberries, which require different conditions than do Apples, Pears, &c. The site should be dug two spits deep, and plenty of well rotted manure incorporated with each layer of soil. Dig a trench 1 yard wide and 1 spit deep at one end of the plot, and wheel the soil to the other end ready for filling in with when the trenching is completed. In the bottom of the trench spread a good layer of rotten manure, and proceed to dig this in, incorporating the manure with the soil as much as possible. Then mark off another strip of ground 1 yard wide, and after manuring the surface turn the top-spit, with the manure, on the freshly-dug soil in trench No. 1, which will fill this up, and leave the bottom of trench No. 2 ready for manuring and digging. If the second spit of soil is deemed good enough to bring to the surface, the first trench should be taken out two spits deep at the outset. For Raspberries, it is a good plan to break up the bottom spit as well, which really means trenching three spits deep. With the bottom spit work in such material as old rubbish-heap manure which has been accumulating for the past season or two. Such elaborate preparation may be considered by some persons as being too costly, but in private gardens bush-fruits usually occupy the same piece of ground for a good many years.

General Work.—Frequently stir with a hoe the soil between rows of recently-planted Strawberries, not only to keep the ground free from weeds, which in itself is important, but also to aerate it, and thus

give more air and warmth to the plants. This is productive of much good, even if a mulch was applied directly after planting. Raspberry plantations will need to be examined again, and any suckers that have since pushed up must be removed, and the surface soil cleaned of weeds. Effect the mulching of Raspberries as soon as a convenient opportunity offers. Old fermenting beds, and soil from Melon and Cucumber-houses, is just the kind of manure that the surface roots of the Raspberry will revel in. If this be not available, then any manure in which the roots may grow freely will be sufficient. In addition, give a good soaking of liquid-manure once or twice during the autumn or winter months. The crop on the autumn fruiting varieties will need protecting from small birds, but before enclosing them with netting, tie the tips of the canes to the wires, as they are now heavily laden with fruit. Gooseberry and Currant plantations from which the fruit has been gathered need the same attention to weeding and mulching. In case of bushes which have been neglected in previous years, a dressing of well-rotted farmyard or stable-manure will impart fresh vigour to them. The manure should be applied at once, and spread all over the surface of the plantation, or at least 3 inches in depth under each bush to as far as the branches extend. The autumn rains will carry the best part of this manure to the roots, and then, when pruning has been done, the solid matter may be pointed in under the surface. Where underground tanks exist for catching the drainings of the stables and farmyard, no better stimulant than this can be found for debilitated fruit bushes. When Morello Cherry-trees have been cleared of fruit, take down the nets, dry them, and store them away for future use. As often as circumstances will permit, hoe the surface soil of the alleys under walls, and both under and around Apple and Pear-trees in the open.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Vines.—The present month is the best in which to remove any Vines that are out of condition, and from which the fruit is cut, and the foliage is in a healthy condition, and the wood well matured. As a commencement, let a few inches of the surface-soil be replaced with fresh loam, mortar-rubble, and crushed bones. Where shanking has occurred, and the foliage is thin, it may be necessary to remove the whole or greater part of the border. In doing this, great care is necessary, in order to prevent the drying of the roots. Wet stable-litter, mats, and long grass, may be bound round them while the work is in progress. Roots should be lifted with care, so as to preserve the finer ones. The drainage materials should be thrown out, and rearranged, and all drains examined, and cleared of detritus. If the border is considered to be too deep, let more drainage be used so as to reduce the depth to 2 feet 6 inches of soil. In making the border the loam should be used in a rough state, and between each layer of loam 6 inches in depth a layer of mortar-rubble, crushed bones, and charred refuse, 4 inches thick should be placed. The roots should be laid out regularly throughout the whole border, some of the strongest being kept near the top, say, about 6 inches under the surface. If the soil be dryish water should be lightly applied to each layer as the work proceeds, and a light mulch will help keep the border in a uniform state of moisture. While work is proceeding, the vinery should be kept rather close, and the Vines syringed several times a day, and always the last thing at night. During hot weather a temporary shading for a week or two after the operation may be required, as the foliage should be preserved in a good condition for a month or six weeks afterwards.

Late Vines.—The drier conditions maintained in the vinery during the ripening of the fruit encourages the spread of red-spider, and when this pest is remarked no time should be lost in sponging the leaves with soapy water, and painting the hot-water pipes with flower-of-sulphur mixed in white-wash. It is of importance that the foliage be maintained to the latest period of the autumn, if the fruit is to ripen properly. Leaves of good texture, and green and healthy during the last stage of ripening, always mean good quality in the Grapes, provided a temperature of 60° to 75° be steadily maintained. Bunches of Hamburgs and

Madresfield Court, now ripe, should be examined occasionally, and decaying berries cut out.

Young Vines.—Spring-planted Vines will require artificial heat for some time longer, in order to thoroughly mature the wood; and the more vigorous, the longer the ripening process takes. Gradually remove all young growth as it appears, and keep the roots uniformly moist. Cease syringing, except occasionally in the early part of the day if insects are present on the Vines.

THE BOTANICAL GARDENS, LIVERPOOL.—

No one having occasion to visit the city of Liverpool should omit to see the botanical gardens there. Thirteen acres in extent, and therefore of no great size, they are well maintained by the city corporation, and the management of them by Mr. J. Guttridge, a graduate of the Royal Gardens, Kew, leaves nothing to be desired. Originally the botanical gardens formed by Roscoe were situate nearer to the centre of the city, but most of the plants were removed to the present site in Edge Lane about half a century ago, and here (although the omnibuses pass the entrance gates), plants and trees out-of-doors have a better chance to thrive at the present time than they would enjoy in the old situation. The greatest hindrance to the successful cultivation of hardy trees and shrubs in these gardens, is that of cold winds, which at times appear likely to sweep everything before them. In addition to the wind nuisance, there are several businesses in the locality that must have an injurious effect upon vegetation. But if as an arboretum the grounds are not likely to be worth notice, they compel one's admiration as a flower-garden, with neatly kept paths and velvety lawns intensely green in colour; for unlike our lawns about the metropolis, they are very seldom disfigured by heat and drought. The amount of bedding-out done is really prodigious in proportion to the area of the gardens, and at the present time, look which way you will the scene is one of rich floral beauty. It might be objected that the turf has been too frequently cut up to accommodate these beds, and that a good effect might be obtained from half the present number. But we have no mind to quarrel on that score. Especially as Mr. Guttridge has so planted the beds that quite contrary effects are produced by different groups. Harmonies rather than contrasts have been arranged, and in one scroll-like design in particular the blending of shades of purple and blue are most pleasing and uncommon. The carpet-bedding, though we have no great admiration for the system, has been done with care and skill. Being a botanical garden there are also beds illustrative of the principal types of the important natural orders. There is a hardy fernery of very pleasing appearance, and there are numbers of miniature fountains among the Ferns. Though the species are mostly hardy, this fernery has the protection afforded by an unheated house. The principal glasshouses consist of a stove, a Palm-house, and hot and cool ferneries. In the stove, beyond the miscellaneous collection of fine foliage plants, there are heat-loving species that have peculiar interest to the average visitor to a botanical garden. Thus, a week ago, when we made a hurried visit, there were several species of the edible *Passifloras* bearing abundance of fruits, a number of Cotton plants were growing well, &c. The Palm-house is a very tall structure, but it would be well if there was more space at its base instead thereof. At the same time it contains several fine specimen plants. Besides these houses there are many span-roofed pits and frames, in which there are Orchids and other plants cultivated, and where we observed a very fine strain of *Celosia pyramidalis*. The Chrysanthemum-house is a comparatively recent addition, and is a span-roofed structure 120 feet long, through the centre of which, at the proper season, a movable stage is erected. Mr. Guttridge has about 2,000 Chrysanthemum plants in cultivation this season, and never have we seen a more promising lot. As he remarked, in the centre of a great Chrysanthemum-growing district like Liverpool, they must have a good show of these plants. And if things go well, they will have a good show. We may add that in the botanical gardens, or, at any rate, in most parts of it, visitors are not permitted to walk on the grass, but the Wavertree Park joins the gardens, and this park is essentially a playground.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPT. 11	Royal Horticultural Society's Committee, at Drill Hall.
WEDNESDAY, SEPT. 12	Paris Exhibition (temporary Show). Derbyshire Agricultural and Horticultural Society's Show, at Derby (2 days).
THURSDAY, SEPT. 13	International Pomological Congress, at Paris (2 days). Boston Dahlia Show, in the Drill Hall.

SALES.

- MONDAY, SEPT. 10.—Fifteenth Annual Trade Sale of Pot-plants, at Dyson's Lane Nursery, Upper Edmonton, by order of Mr. H. B. May, by Protheroe & Morris, at 11 o'clock. Dutch Bulbs, at Protheroe & Morris' Rooms. Bulbs, at Steven's Rooms, 38, King Street, London, W.C.
- TUESDAY, SEPT. 11.—Annual Trade Sale of Winter-blooming Heaths, at Burnt Ash Road Nurseries, Lee, by order of Messrs. B. Maller and Sons, by Protheroe & Morris, at 11 o'clock. Dutch Bulbs, at Protheroe & Morris' Rooms.
- WEDNESDAY, SEPT. 12.—Annual Trade Sale of Winter-flowering and other Plants, at the Nurseries, South Woodford, Essex, by order of Mr. John Fraser, by Protheroe & Morris, at 11 o'clock. Dutch Bulbs and Lilium Harrisii, at Protheroe & Morris. Bulbs, at Steven's Rooms, 38, King Street, London, W.C.
- THURSDAY, SEPT. 13.—Thirty-second Annual Trade Sale of Stove and Greenhouse Plants, &c., at the Brimsdown Nurseries, Green Street, Enfield Highway, by order of Mr. J. H. Thompson, Jun., by Protheroe & Morris, at 11 o'clock. Dutch Bulbs, at Protheroe & Morris' Rooms.
- FRIDAY, SEPT. 14.—Nineteenth Annual Trade Sale of Winter-flowering Heaths, at Longlands Nursery, Sidcup, S.E., by order of Messrs. Gregory & Evans, by Protheroe & Morris, at 11 o'clock. Dutch Bulbs, at Protheroe & Morris' Rooms. Imported and Established Orchids, and Mexican Cacti, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—58°4'.

ACTUAL TEMPERATURES:—

LONDON.—September 5 (6 P.M.): Max. 70°; Min. 51°.

September 6: Weather by day general, with light winds and much sunshine.

PROVINCES.—September 5 (6 P.M.): Max. 64°; Reading; Min., 59°, off West Coast of Ireland.

It is with deep regret we record the somewhat sudden death on Thursday, August 30, of Sir JOHN BENNET LAWES, Bart., D.C.L., LL.D., F.R.S., &c., who passed peacefully away after only ten days' illness, at his residence, Rothamsted, at the advanced age of eighty-six years.

There are no names more familiar or more honoured among students of agricultural chemistry, or to farmers and horticulturists generally, either in this country, or indeed in any other civilised country of the world, than those of Sir JOHN LAWES and his able coadjutor, Sir J. HENRY GILBERT, who for more than half a century have devoted their entire energies to assisting and to benefiting the science and practice of agriculture, and indirectly the sister science of horticulture, beyond that of any other person, living or dead. The Rothamsted Experimental Station was founded by Sir JOHN BENNET LAWES, and has been carried on exclusively at his own expense, and by him it has been bequeathed to the British nation, together with the laboratory, certain areas of land, and the handsome endowment of £100,000, for the continuance of the investigations now that he has passed away. In February, 1889, trustees were appointed, and the necessary trust deed executed, and a committee of management, with Sir JOHN EVANS as chairman, has already entered upon its duties.

Sir JOHN LAWES was born at Rothamsted in 1814, and on the death of his father in 1822, when only eight years of age, he succeeded to the estate at Rothamsted, which adjoins the village, and is included in the parish of Harpenden, Hertfordshire. He was educated at Eton and at Brasenose College, Oxford, and he afterwards spent some time in London for the purpose of the further study of chemistry. As a boy Sir JOHN early developed a taste for

science, and in an autobiographical note to Mr. MORTON, the editor of the *Agricultural Gazette*, in 1833, he says:—"It is always difficult to predict whether a juvenile taste will develop in after life into anything useful. To write upon the door of a dark room with a stick of phosphorus, to dissolve a penny in nitric acid, or to convey an electric shock to your old house-keeper, who refused to touch the jar with her hand, but did not mind touching it with the end of a poker, these were freaks which, with the accompanying destruction of cloth and furniture, cause the elders of the house to look with unfavourable eyes at a boy with a taste for chemistry."

Great undertakings often have small beginnings. The Rothamsted experiments were begun with plants in pots, which were afterwards extended to the field. The researches of DE SAUSSURE on vegetation being the chief subject of study at the commencement; and of all the initial experiments made, those in which the neutral phosphate of lime, in bones, bone-ash, and apatite, was rendered soluble by means of sulphuric acid; and the mixture, now so well known as superphosphate of lime, applied to root crops, gave the most striking results. The importance to agriculture and horticulture of these early experiments cannot easily be estimated. In them was first observed the excellent results produced by manuring Turnips with superphosphate, which led to the establishment of an artificial manure industry which has revolutionised both British and foreign agriculture, horticulture, and fruit-growing.

In the year 1854 a considerable sum of money was subscribed as a testimonial to JOHN B. LAWES, Esq., for the services he had rendered to British agriculture, the proposal being advertised in this journal, April 8, 1854, and cordially remarked upon in the next issue. At his request the money was devoted to providing a new laboratory to take the place of the old barn laboratory, which would enable him the better to prosecute and extend inquiries, the publication of the results of which would be the best return he could make for the honour that had been conferred upon him. The laboratory was presented in July, 1855, and in a speech then delivered, Mr. LAWES said, "Science is not to do away with a rotation of crops, but to enable the farmer to judge of the properties of all his several crops in rotation, and whether it would be better under certain circumstances to grow a second, third, or even a fourth crop, on the same land, or to follow the same course. Science will not enable the farmer to grow two grain crops in one year, but it may give him such information respecting the principles of manures as will enable him to turn over his capital in a much smaller space of time than at present. A great deal of the farmer's capital is placed in the land, where it lies dormant for a long time; but science may correct that evil by enabling him to put the right manure in the right place."

The results of the Rothamsted experiments have been given in a series of papers too long for enumeration here, as they number a total of one hundred and thirty-two separate pamphlets; and it may be of interest to record that the earliest of the Rothamsted researches appeared in the *Gardeners' Chronicle*; and, as regards the agricultural history, progress, and literature of the past sixty years, we may confidently say these unique investigations are to be reckoned among the glorious achievements of this country.

In the words of a contemporary, Sir JOHN LAWES was an unostentatious but gifted squire, who has lived an industrious and happy life in the English county of Hertford, and has by his genius and public spirit given to the world an inheritance so goodly, that its worth can be scarce over-estimated.

The Hardiness
of the
Sweet Pea.

Now that the show and conference on these beautiful and fragrant flowers are over, it is of the greatest importance to

remind all who admire and love them that the Sweet Pea is quite as hardy as the general run of our edible Peas. The more succulent Marrow Peas are, for instance, less so than the early frame varieties.

Sweet Peas are now increasing so fast and improving so much, that it would be rash to assert that similar or even greater degrees of hardiness do not exist among them; but up to present date, with the exception of a few dwarfs, we have no absolute proof of this; and growers are perfectly justified in treating the whole family as hardy annuals that may be safely sown in the open air any time that may prove most convenient from October to June. These dates may startle many readers, both for their earliness and their lateness. The object is to extend the season, always too short, even to those who regularly suppress seed-bearing by picking off the pods. To leave these in quantity to ripen their seeds will afford a glut of flowers which finishes all of a sudden.

By sowing in October or November on warm sites and good soil, and by proper care and culture, we may forward the flowering by several weeks. The less direct manuring of the land, especially if bloom be wanted early, the better. No better ground could be found for the Sweet Peas than that which has carried a good crop of Potatoes. Lift the latter, and dig the ground, leaving it in ridges till sowing time arrives. The seeds should be sown thinly in drills made flat at the bottom and three inches deep. The only safeguard known against mice and other enemies is very simple, cheap, easily applied, and perfectly efficient. Sprinkle the Pea-seeds with tepid or cold water, see that they are all wetted, then dust them with as much red-lead as will stick to them. This coat of mail or armour is thin but it is a panoply of safety: while the lead in no way injures the Pea, and it mostly deters if it does not kill the rodents or other foes.

With the development of quality, and the expansion of Sweet Pea culture, as the first result of the two days' conference at the Crystal Palace, we may doubtless have a rise in the prices of the seeds—especially of the finer varieties. They are therefore well worth a coat of red lead before committal to the risks and dangers of the open air late in the old year, or in January, February, or March of the new year.

For our part, we do not think any such precautions necessary. Our garden foes are wise as ever—if not more so as to the quality of the food they eat. The birds are equally discriminating between edible Peas, greedily devouring the former in all stages of their development, and, as a rule, rigidly ignoring the presence of Sweet Peas in tenderest podlets or most promising produce. Can it be that the colour and the fragrance of Sweet Peas come as a note of warning, and a note of danger to our garden-foes, that there is suffering or death for them, and so thus they leave them

alone, and would no more dream of eating them than our household helpers would of cooking them?

The poisonous or injurious character of Sweet Peas needs to be more impressed on the public when their popularity is advanced through the great show and conference recently held at the Crystal Palace. Children have been known to eat them—but then what living or other thing have not children eaten or tried to eat?

The treatment of Sweet Peas as hardy instead of as tender annuals to be sown in succession in the open air is thus carried out. At any convenient time from November to May, or even June, where Sweet Peas are wanted in quantity till the winter frosts blacken or cuts them down. Some of the cleanest blooms may often be picked through comparatively similar dripping Autumns.

The old plants forbidden to seed, carefully surfaced, mulched, and watered, likewise yield enormous and continuous crops and blossoms. Nevertheless, young and successive crops of Sweet Peas may be had by sowing once a month or six weeks. This culture is also more simple than the usual system of sowing in heat 50° or so in February or March, potting off, nourishing into size, and planting out. There is no need whatever for it in this case. The coddling system of raising and spindling in hot-houses and frames has not greatly succeeded as yet in weakening the constitution of the Sweet Pea. Fortunately it is still a hardy annual, and may be safely and successfully treated as such.

A sentence or two about cultivation and staking, often the making or marring of good successful growth and bloom may be of use. Some wait till the Peas are through; then draw an inch or more of sweet, fine, warm soil up against their stems with a rake or hoe. At this stage the Peas should also at once be staked. The latter is the crucial operation in Sweet and other Pea culture. It is mostly performed too late, and far too thickly and closely. If put off till the roots of the Peas have run far, the staking proves very destructive among them. We have known not a few fine rows and promising groups of Sweet Peas severely checked and injured through this underground strangling of the best roots, through the thoughtless staking of the tops. And what can we say of the general overcrowding, and crushing of the tops? Only this, that it is wholly wrong. The art of staking Sweet, and, for that matter, edible Peas consist in affording a maximum amount of support with a minimum of shade. This rule is in practice not seldom reversed. The stakes are so many and so closely crowded together, as to smother the living bine. The only possible way of doing full justice to the living Pea-bine is to use as few and as light stakes as possible.

Sweet Peas can hardly be called flowers of the sunshine, as not a few of them put on their most exquisite hues in partial shadow. On the other hand, they cannot do their best from beneath a narrow cage of rough timber, through which every living bine, tendril, leaf, bloom, has to struggle into the light and air. Hence, let strength and lightness be the motto in the staking of Sweet Peas. It might also prove useful if, at the next meeting, papers were read or prizes offered for novel, more useful, and artistic means or giving secure support and more graceful training to these lovely flowers.

Early staking is most desirable not only for the safety of the roots, but as the simplest means we possess of top protection and climb-

ing aid for the Peas. Years of experience of early staking seems to show that Sweet and other Peas have, as it were, the power to recognise the existence of stakes overhead, and sufficient consciousness to know that they have to climb them. Hence, they lay hold of them at once, and so on till they reach the limit of their stature, or the stage of exhaustion. The stakes of the Peas, especially if supplemented by a few sprays of Yews along the side and in the rows of the Peas, prove a powerful protection just where and when it is most needed, and greatly stimulate the growth, and advances the period of flowering. What hardy annual would not be the hardier through some such protection as is secured through the proper staking of Peas so soon as the plants are an inch or so through the surface?

Beyond staking, an occasional mulch of spent Mushroom-bed manure and a deluge of water, house-slops, or sewage in dry weather, will keep the Peas in beauty for many months. Sweet Peas in most gardens are largely used for screens between the flowers, fruits, and vegetables, and as back rows in groups and borders of mixed herbaceous perennials. For this and other reasons, artistic and utilitarian, Sweet Peas have been too much grown on the same ground. In spite of the highest cultivation, the final results of this perpetual Sweet Pea-ing is a serious deterioration.

The remedy is more difficult than might be supposed. There are many fine gardens in which the chief walks might as readily be changed as the Sweet Pea-screens, blinds, groups, &c. These are always looked for and found in the same places. They have, in fact, a high utilitarian value as screens, and great artistic merits to those who can appreciate their beauty and enjoy their fragrance.

Hence, a compromise may be recommended, so that the lovers of Sweet Peas, who are rapidly increasing in number, should find their charming plants virtually where they expect to find them, although the gardener may have shifted the plants into more or less fresh soil, a foot or so from the old root-run. By leaving the latter as fallow, well manured, fine Peas could be grown on it again in a few years. Of course, the further in reason one can put the new Pea-ground from the old, the better for them. But while utilitarian and artistic reasons force the two closely together in most gardens, and even a foot is a considerable distance to be bridged over where the Sweet Pea supports are fixed wire espaliers.

As to groups, &c., there is more latitude of change of site without injury to their artistic and customary effects. Thus, much new beauty may be added to our gardens, while most of their old features and associations are religiously preserved.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees of this Society will be held on Tuesday next, September 11, in the Drill Hall, Westminster. In the afternoon a lecture on "Garden Manures" will be given by Mr. F. J. BAKER.

AGRICULTURAL STATISTICS, IRELAND.—It is stated in the "General Abstracts" showing the acreage under crops, that the total area under crops in 1900 is 4,658,627 acres, being as compared with the area of 1899, an increase of 31,082 acres or 0.7 per cent., the highest percentage being in Munster—16,957 acres, or 1.4 per cent., and the lowest in Leinster, 805 acres or 0.1 per cent. The area under Flax, 47,327 acres, shows an increase of 12,338 acres, or 35.3 per cent. Land under Potatoes has decreased by 8,501 acres, and that

under Turnips by 3,551 acres. The area under Cabbages has increased by 1,229 acres; Carrots, Parsnips, and other green crops by 1,917 acres. The net decrease under green crops being 3,170 acres. Wheat shows a large increase, being 63,797 acres in 1900, as against 32,019 acres in 1896. The area under Barley also has increased a little.

A SUBSTITUTE FOR TURF ON LAWNS.—In *Die Gartenwelt* for August 25 last, we remark that a correspondent recommends as a substitute for grass in dry places under trees, and in any place where grass does not succeed, or mowing is not desirable, *Veronica repens* (erroneously called *V. alpina*). *V. repens* is but little known in gardens, but it is a plant worthy of being highly recommended. The plants form a regular, green, fresh-looking carpet, and possesses the desirable attribute of not suffering in unfavourable weather. The plant is covered in the spring with innumerable whitish flowers, so that the lawn looks then as if covered with fresh-fallen snow. The plant is propagated by division after the flowering is over in April, much in the same manner as Violets, Chamomile are treated, and the plantlets set out at 6 inches asunder in well-tilled soil, being copiously afforded water at the start. In four or five weeks the plants will have grown together. Although the plant endures uninjured every sort of weather, it is advisable in time of drought to sprinkle it overhead freely once a day.

FARM PRODUCE FROM LINCOLNSHIRE BY SEA TO LONDON.—The restrictions being placed on the farmers of south Lincolnshire by the railway companies being found so onerous, the farmers, it is said, in the districts of Spalding, Holbeach, and Moulton, are taking action with a view to chartering a steamer to run from Fosdyke on the river Welland to London, Grimsby, Hull, and other ports, with cargoes of feed-stuffs and country produce.

WOOD - PULP FROM CANADA.—Canada is, according to Mr. GEORGE JOHNSON, statistician in the Department of Agriculture at Ottawa, the possessor of the largest forests of Spruce Fir in the world, and the supply of wood for pulp making is practically unlimited. The country, moreover, possesses widely distributed water-power, and a favourable condition of the labour market. The area covered with forest is about 1,400,000 square miles. Taking half this area, or 450,000,000 acres as under Spruce, which is capable of producing 4,500,000,000 tons of ground pulp, we have a quantity sufficient to keep the paper-mills of the United States of America going at their present rate for fifty years, taking 900,000 tons of pulp-wood as the quantity annually consumed in these mills. But Spruce reproduces itself to pulp-wood size in every thirty years. Hence, it is evident that the Spruce woods of Canada will meet all demands made upon them for ages to come.

WAGES OF FARM LABOURERS.—Details of the wages and earnings of agricultural labourers in the United Kingdom are given in an exhaustive report which was issued by the Board of Trade recently. From this it appears that in 1898 the average earnings per week of those workers were—in England, 16s. 10d.; in Wales, 16s. 5d.; and in Scotland, 18s. 1d. In Ireland, 10s. 1d. was the average wage.

ECONOMY IN MARKETING is one of the questions of to-day, not only here, but in all countries having an export trade of any importance. Whilst we are tinkering at it in this country, our Transatlantic friends are working away in earnest, especially in California, where the preparation of Prunes and the canning of other fruits form a great industry. An association has taken up the work of regulating the curing and marketing of Prunes—other dried fruits come under the regulating hands of the association's officials, and the canning of fruits for exporting in that condition is being regulated to a profitable issue.

FRUIT PRESERVING FOR WOMEN AND GIRLS.

—In Brandenburg, the Chamber of Agriculture for the province, are despatching this year skilled persons to those villages and towns who desire it, to afford instruction in rational methods of turning hardy fruits into marketable commodities. The course begins in the middle of the present month, and can be attended free of charge. In order to forward the matter, the Chamber of Agriculture is working in union with farming and gardening societies. In view of the glut of fruits in certain years, and the ignorance of fruit-preserving among the poorer inhabitants of our towns and villages, some such a course of instruction should be welcomed in this country. As matters stand at the present time, the commercial fruit-preservers have it all their own way.

AGRICULTURAL COLONISATION AT THE CAPE.

—It having been bruited abroad that at the close of the war favourable conditions would be attached to the offers of land to intending emigrants anxious to enter upon the cultivation of the soil for the production of fruits, &c., an old correspondent sent a communication to the Secretary of the Department of Agriculture at Cape Town requesting information on the subject. By the last mail a reply has been received, in which it is officially stated that the subject is occupying the attention of His Excellency the Governor and High Commissioner, who will publish the results so soon as a conclusion has been arrived at.

THE GLUT OF FRUIT.—With the present enormous fruit crop, especially Plums and Damsons, it is devoutly to be hoped that means are being taken to preserve it whole, or as jam, so that the cultivators will not be losers by the bounty of Providence. Such bulky goods at the present onerous freight rates charged by the railways often cost more in transit charges than they sell for, but preserved on the spot, or in the vicinity of the fruit orchards, their bulk is considerably reduced, and their distribution as preserves made lighter and much less costly. We hear this year of Cherries and Plums left to rot on the ground, and it will doubtless happen that much of the Damson crop will be a loss to the growers because of low prices and high railway rates, unless something be forthwith undertaken to turn the fruit into a marketable commodity.

PLANTATION DOCTORS IN CALIFORNIA.—In the long ago there were doctors for the "coloured pussons" held in bondage on Southern plantations; now it is the plants cultivated that are treated by doctors—or their equivalent; for we find, according to the report of the Californian State Board of Horticulture, that inspectors are required to make plans of insect-infested orchards, showing the exact location of each infested tree; and as a result of the careful work of the inspectors, great success has attended their efforts. Twenty-eight orchards in Riverside County, which in 1897 had a total infection of 1609 trees, had in 1899 only 433, a reduction of over 73 per cent.

PRESENTATION AT GUILDFORD.—Mr. AMBROSE HART, florist, of Guildford, is retiring from active work in the management of this business, and his sons, Messrs. AMBROSE & GEORGE HART will henceforth direct the management. Mr. AMBROSE HART, senior, recently signalled this circumstance, and also the event of his attaining his sixty-fifth birthday, by entertaining all his *employées* and a few friends to dinner. There were about fifty persons present, and the *employées* testified to the respect entertained by them for Mr. HART, by making him and Mrs. HART suitable presentations.

GLOUCESTER FRUIT MARKET.—The success which has so far attended the recently established Gloucester Fruit Market (the inaugural sale of which we reported in our issue of August 17) has surprised even the most sanguine supporters of the project, and there is every reason for believing that the popularity of the sales will increase as the season advances. It is gratifying to know that

both senders and buyers of fruit and vegetables are increasing in numbers, and that, on the whole, satisfactory prices have been realised. At the first sale, held on Monday, August 13, 180 lots were consigned; whilst on the following week the quantity rose to 800, and on Monday last the number was just under 1,000. Messrs. SANDER & SON conducted the first two sales, but in consequence of the large number of lots to be dealt with, Messrs. CASTLE & POPE shared the rostrum with them at the succeeding sales. The corporation a fortnight ago decided to hold a Wednesday as well as a Monday market, a decision which has met with general approval, and the attendance on that day has been largely augmented. Buyers continue to come from far afield, and this week one journeyed from Pembroke Dock, and another large dealer from London. There has been a great run on the corporation baskets (hired out at 1s. 6d. each), and it is thought that a great many more will have to be purchased in order to meet the demand.

A DAHLIA SHOW AT THE ROYAL AQUARIUM, WESTMINSTER.—We are informed that an exhibition of Dahlias will be held on September 18, 19, and 20, at the Royal Aquarium, for the purpose of continuing the display of Dahlias held for several years by the National Chrysanthemum Society, but now abandoned by that body. An exhibition of Gladioli, by Messrs. J. BURRELL & Co., of Cambridge, will also be a feature of the show. Schedules of prizes can be had of Mr. RICHARD DEAN, V.M.H., Superintendent 42, Ranelagh Road, Ealing, W.

INDIAN TURPENTINE.—According to *Indian Gardening and Planting*, for August 9, 1900, the production of turpentine in India is likely before long to become an important industry. The Punjab Government have recently sanctioned the establishment of a factory for the distillation of the crude resin, the experiments conducted in the Dehra Doon Laboratory and in Kangra having convinced the Forest Department that production on a very considerable scale is possible. In the Kangra Valley forests alone, last season, some twelve hundred maunds of resin were collected.

YORKSHIRE NATURALISTS' UNION.—The 154th meeting will be held at Grassington, for the investigation of the natural history of Grass Woods, Kilnsey Scar, Cracoe, Threshfield, &c., from Saturday to Monday, September 8 to 10, 1900, in connection with the Bradford meeting of the British Association. Through return tickets at pleasure party rates will be issued at all stations on the G. C., G. N., H. & B., L. & Y., L. & N. W., Midland, and N. E. railways which have booking arrangements for Skipton, to members and associates of the British Association or of the Y.N.U. showing their signed cards of membership at North-Eastern stations, or (at other companies' stations) surrendering the certificate noted below. Tickets taken on Saturday, September 8, will be available for return any day up to Tuesday, September 11. Where through bookings are not in operation, members may book to the most convenient junction, and re-book to their destination; the reduced fares being available for each stage of the journey. N.B.—The railway booking clerks will only grant these reduced fares to members and associates producing a special certificate signed by one of the secretaries of the union (except at stations on the North-Eastern line, where production of card of membership is sufficient). Members and associates wishing for this certificate must apply to Mr. Hawkesworth for it, and must enclose a stamped directed envelope and their current card of membership of the union, which latter will be returned with the certificate. Members and others attending the meetings of the British Association sections can leave Bradford at 12.58 P.M. in time for 2.10 coach to Grassington, in the neighbourhood of which the remainder of the afternoon can be profitably spent. The district for investigation includes a portion of Upper Wharfedale and Grass Wood, a region which

has proved to possess a rich fauna and flora, although it has never had the benefit of a resident investigator, and therefore affords scope for much systematic work to be done. The vale of the Upper Wharfe is one of the most picturesque and beautiful of the Yorkshire dales, presenting a series of romantic limestone "scars," of which Kilnsey Craig, Arncliffe Cote, Hawkswick Clowders, the Scars about Buckden and Kettlewell and those in Grass Wood are fine examples. The Wharfe is here a swift and noble stream, dashing at times over a shallow, rocky bed, and at Ghaistrills confined to a very narrow channel or "Strid," while at Nether-side and Grass Woods its steep and richly-wooded banks rival the sylvan attractions of Bolton. Grass Wood is a very extensive stretch of woodland of old growth, richly underwooded, occupying the left or eastern slopes of the Wharfe, and cut into unequal halves by the main road up the valley. The smaller portion, "Grass Low Wood," lies between the road and the river; and the larger one, "Grass High Wood," occupies the hill-slopes of an irregular country towards the east, including within its limits several fine limestone "scars," from the summits of which may be obtained magnificent and extensive views of the surrounding country.

BOTANY.—Flowering Plants.—Mr. L. ROTHERAY states that the district offers a rich and varied field to the botanist, owing in a great measure to its being situated on the mountain or carboniferous limestone, the scars of which offer a good and safe habitat for many rare and interesting species of limestone-loving plants. It is very probable that a careful investigation of both sides of the river banks may yield other species which have not yet been recorded for the district.

Mosses and Hepatics.—Mr. W. WEST, F.S.L., writes that the neighbourhood is a fertile one. A large number of species occur, among them being the following:—*Seligeria pusilla*, *S. acutifolia*, *S. trifaria*, *Swartzia montana*, *Encalypta vulgaris*, *Trichostomum mutabile*, *Barbula intermedia*, *Zygodon Nowellii*, *Bartramia Oederi*, *Breutelia arcuata*, *Orthothecium rufescens*, *Cinclidotus fontinaloides*, *Rhynchostegium murale*, *Lejeunea calcarea*, *Asterella hemispherica*, *Metzgeria pubescens*.

Fungi.—The late Mr. H. T. SOPPITT wrote that Upper Wharfedale is fairly rich in fungi, especially *Uredineæ*, of which many species have been found during the past few years between Barden and Grass Woods. The *Æcidium* condition of several interesting species will be found by specially looking for.

PUBLICATIONS RECEIVED.—*Die Natürlichen Pflanzen Familien*, 1st Teil, 4 Abteilung.—Cornell University Experiment Station Publications:—*Bulletin 171: Gravity or Dilution Separators (Dairy Instruments)*, by H. H. Wing. *Bulletin 172: The Cherry Fruit-fly*, by M. V. Slingerland. *Bulletin 173: The Relation of Food to Milk-fat*, by Leroy Anderson. *The Injurious Scale Insects and Mealy-bugs of the British Isles*, by R. R. Newstead, F.E.S., Curator of the Grosvenor Museum, Chester. A capital well-illustrated manual of scales and mealy-bugs, which should be found on every gardener's bookshelf, affording easily-understood descriptions and life-history of each, and the methods to be adopted for their destruction. —*Year-book of the United States Department of Agriculture for 1899*. Washington: Government Printing Office.—*Hooker's Icones Plantarum*, vol. vii, Part III., August; or vol. xxvii. of the entire work.—*The Botanical Gazette*, vol. xxx., No. 2, August, 1900. Chicago, Illinois.—*Report of the Royal Botanic Garden, Calcutta, for the Year 1898–1899*, by Major Prain, Superintendent of the Garden, and of Cinchona Cultivation in Bengal.—*Prospectus of the Central Technical Schools for Cornwall, Second Session, 1900–1901, commencing Tuesday, September 18*. The course consists of well selected subjects, viz., Botany, inclusive of the structure and vital phenomena of the most conspicuous types of plants, and characteristics of the principal orders as illustrated by the flora of the locality. The advanced stage will cover a practical acquaintance with (1), The chief Orders and Genera of the British Flora; (2) The Morphology and Physiology of Ferns, Mosses, Algae, and Fungi. The students in practical Botany will carry out a series of simple experiments on the functions of different parts of the plant, and on the varied influence of environment. They will also receive practical instruction in descriptive and systematic botany. A course on Fruit Culture will commence on October 18, and is intended for farmers, gardeners, and allotment-holders. The classes we have mentioned are conducted by Prof. James Clark, M.A., Ph.D., A.R.C.S. These are but a moiety of the subjects taught which should be of great value to persons following agricultural or horticultural pursuits in the county.

CARNATION "BEAUTY OF EXMOUTH."

In fig. 56 we have reproduced a photograph of a very charming and sweetly-scented Carnation, shown by Mr. W. J. Godfrey at the National Carnation Society's Exhibition at the Crystal Palace on July 25, when it was awarded a Certificate. The flowers then exhibited, writes Mr. Godfrey, were grown in the nursery beds, and had not been specially cultivated for exhibition. Nevertheless, they were greatly admired for their size and form, and for the quality of the petals and their fragrance.



FIG. 56.—NEW WHITE CARNATION, "BEAUTY OF EXMOUTH."

The variety has stiff, wiry stems, is free-flowering and hardy, and has a good constitution, and the calices very rarely become split.

HIGHBURY, BIRMINGHAM.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THIS estate of the Right Hon. Joseph Chamberlain consists of 110 acres, and is situated at Moor Green, in the outskirts of the town. There are about 40 acres of garden, meadow, and pleasure-ground, surrounding the mansion; the meadow being as trimly kept as in some places is given to the garden proper. The house stands high, and from the terrace a view is obtained in which two features present themselves prominently; firstly,

the gardens have an advantage in being arranged on undulating ground, a feature of which the late Mr. Milner, who was entrusted with the laying-out of the property, made the best use; and secondly, the age which the fine old Ash, Oak, and other trees impart to the landscape everywhere. Gardening may be said to be the chief recreation of Mr. Chamberlain, but even the Orchids do not command his care and admiration more than the aged trees; one old Yew-tree (which, with another near at hand, are said to be two of the oldest in the country) coming in for a special amount of attention.

Viewed from the high ground, the undulating grassy slopes, here and there broken by massive clumps of Rhododendrons, or banks of Conifers, Hollies, and flowering shrubs, present beautiful and varied pictures, in all of which the wisdom of planting the smaller, and especially the variegated shrubs, towards the fronts of the beds and groups in masses is evident. From the lower slope a fine view of the upper gardens is obtained (see Supplement), the house appearing through the shrubs in the distance. From a stone balcony a fine view is obtained from the upper over the lower slopes; on one side a rockery, with pond in front, being visible, which with its dense growth of water-plants makes a pleasing feature.

Mrs. Chamberlain is also enamoured of gardening,

Roses, Carnations, and others with fragrant flowers being her favourite plants, and consequently they are well provided for in the several little gardens which have been arranged to receive them. The chief Rose-garden had a good show of flowers this year, the corner set apart for the Penzance Briars being especially bright. On one side is the alpine garden for the smaller growing species which grow in tufts, and a very pretty and bright display is made by these plants. Beyond is the model dairy; and passing round we come to many pretty quiet nooks, the one called "The Dell" containing some good specimen Conifers, among which a handsome *Sciadopitys verticillata* is remarkable for the perfection of its shape.

The lower walks are furnished with herbaceous borders, and beds in which the different species of showy Iris are prominent; and the ornamental water, crossed by rustic bridges, looks very picturesque, the boat-house appearing at the end, and the little densely covered islands making quiet retreats for the swans, water-fowl, and other birds. On the banks the Bamboos grow into large bushes, and the flowering shrubs and different species of Iris make a very pretty display.

The ascending walk on the other side leads by beds of herbaceous, alpine, and bulbous plants, each section planted together. The Montbretias here thrive well, and are very showy; the Pæonies, Carnations, Pinks, and other flowers affording masses of fragrant flowers. Through the glade, on rising ground, is the new rock garden with a pergola for climbers in the course of formation. The Viola-edged borders are very effective, being filled with Lupins, Delphiniums, Phloxes, Poppies, Sweet Peas, and other showy flowers. At the side are tall Cupressus Lawsoniana, backed by taller shrubs and trees. Another view, a photograph of which we hope to publish next week, extends over an ornamental pond beneath a very fine old Oak, the sides clad with Willows, Acacias, Rhododendrons, &c., the edge of the water having Bulrushes, Irises, and similar plants, in rustic profusion.

Highbury may be said to have a number of charming little gardens, cleverly arranged, so as to form an extensive garden harmonious in every part.

THE PLANT-HOUSES

are arranged conveniently to the dwelling-house, the entrance being made through the Winter Garden, arranged with Palms and other ornamental tropical plants; the side-stages furnished with white Lilies, Marguerites, and other flowering plants. Next comes the Rockery-house, planted with Ferns, &c., and in which the handsome Anthurium Chamberlainianum forms an effective feature. From the rockery runs a long house, or corridor, the roof of which is covered with beautiful flowering climbers, and which serves to combine the entrances of the thirteen long houses running parallel to each other, and which contain the Orchids and a general collection of plants. There was a fine show of flowers in the corridor at the time of our visit, and on the roof the handsomest subjects in flower were *Solanum Wendlandianum*, *Lonicera sempervirens*, *Cassia corymbosa*, *Begonia corallina* (which has been more or less in flower continuously for four years), *Solanum jasminoides*, *Bougainvillea glabra*, and *Cobaea scandens variegata*.

Mr. John Deacon, the gardener at Highbury, is as enthusiastic in gardening matters as Mr. Chamberlain himself, and that goes a great way towards accounting for the perfection to which both fruits and flowers are brought at Highbury. Passing through the houses, we note one filled with a very fine strain of Gloxinia, the plants carrying a great profusion of variously coloured flowers; another with decorative Pelargoniums, and one with zonal Pelargoniums were masses of colour. Next follow two houses of Carnation Souvenir de la Malmaison, and the newer varieties and hybrids of it, beautifully grown and profusely flowered; C. Sir C. Freemantle, of a bright rosy-red, being evidently a favourite. A house of *Ixoras*, *Codiaeums*, and *Eucharis* looked well; a house of *Amaryllis* contained the best cultivated

specimens we have seen of late; and in other houses the scarlet Anthuriums, Cacti, greenhouse Rhododendron, Gesnerias, and other flowering and foliage plants are excellently well grown, and many in flower.

The Orchids continue to thrive, and equal attention is paid to the raising and cultivation of new hybrid Orchids, as to the culture of the finest varieties of imported species. The hybrids are in all stages, from the tiny seedlings, just greening the seed-pans over, to the mature flowering plant, and in their culture the choice of position deemed most suitable for them in any of the houses is taken. Generally speaking, they are found to succeed best suspended from the roof, or on movable stages, in which they are brought well up to the glass of the roof.

In the first house entered the plants were mostly of flowering size, and embraced many of the hybrids raised at Highbury, among those noted being several of the pretty *Lælio-Cattleya* × *Highburienensis* (*C. Lawrenceana* × *L. cinnabarina*), *L.-C.* × *Duke of York*, *Cattleya* × *Mrs. Endicott*, *C.* × *Chamberlainiana*, *C.* × *Claudia*, and a great many others. Suspended with them are the finer forms of the 'large-flowered *Cattleyas*, the albinos, and others requiring special attention. On a shelf at the end of the house was a fine lot of *Cattleya maxima*, which many consider very difficult to grow, and yet these were in splendid flowering condition, notwithstanding the fact that they have been frequently bearing seed-vessels. The staging in the house held a good lot of the showy *Cattleyas*, and especially *C. Gaskelliana*.

The next house contained showy *Lælias* and *Cattleyas*, including a good batch of *Lælia Digbyana*. Among the young seedlings of special interest noted were *Lælia crispa superba* × *Cattleya Gaskelliana alba*, and *L. anceps Sanderiana* × *L. flammea*. Here *Dendrobium albo-sanguineum*, *Habenaria Kingi*, *Cirrhopetalum Colletti*, and other singular species were doing well, and in the adjoining house the *Saccolabiums*, *Aërides*, and *Vandas* were in excellent health. Mr. Smith, the Orchid grower at Highbury, considers that most of the growers who fail with these plants do so from keeping them too hot and moist in winter, and often from not affording them enough heat and moisture in spring and early summer.

The next house had a beautiful show of *Cattleyas*, &c., set up with Maidenhair Ferns. Here, also in bloom, was *Sophro-Cattleya* × *Chamberlainiana* (*Sophranitis grandiflora* × *Cattleya Harrisoniana*), its pure rose-pink flowers with chrome-yellow centre well showing the difference between the original form and the variety triumphans, which has a reddish-crimson colour. Also in flower were *Lælia tenebrosa* in several varieties, and *Lælio-Cattleya* × *Iolanthe*, and other hybrids; while suspended overhead were *Gongora quinque-nervis*, *Dendrobium* × *formoso-Lowianum*, and some other *Dendrobiums* in flower.

The long, cool north house contained the *Odontoglossums*, and a brilliant show of scarlet, purple, and mauve *Masdevallias*, which Mr. Smith winters in a house where they get more sunlight than in this house, and in consequence they flower better than they formerly did. In the same house are *Oncidium concolor*, *Cochlidia Noezliana*, some *Odontoglossums*, &c., in flower.

The next house is a very light one, where the fine collection of *Lælia-anceps* are grown, and which are never shaded, the only protection afforded them even in the hottest weather being a few sheets of tissue paper placed on the plants inside the house in the most sunny positions at the hottest part of the day. Hence they flower most profusely, one large mass of *L. anceps Sanderiana* having had 108 flowers on each occasion of its last two flowerings.

In a small intermediate-house a batch of *Miltonia vexillaria* was growing satisfactorily, so also *Odontoglossum grande*, *Lælia monophylla*, *L. autumnalis*, *L. albida*, *Sophranitis grandiflora*, and kindred species; and in another cool-house *Odon-*

toglossums *Epidendrum vitellinum*, *Disas*, &c. At the end of the corridor is a lofty curved-roofed house, the sides of which are occupied by immense plants of the different species of *Sobralia*, the long Bamboo-like stems of some of the specimens of *S. macrantha* bearing from twelve to eighteen very large rose-purple flowers. Here also is a large specimen of *Sobralia Cattleyæ*, whose long stems grow on and on but never flower, and plants of what should be a hybrid between *S. macrantha* and *Cattleya Warscewiczii*, the seedlings being raised from seeds so recorded. The flowers and growth can only be those of *S. macrantha*, though there is a peculiar elongation of the lip and other strange features about it. In this house was a large specimen of *Broughtonia lilacina* in flower, and other good things.

In an adjoining warm-house the *Phalænopsis* are thriving, and a number of *Dendrobium Phalænopsis* doing well, together with *Oncidium Lanceanum*, *Epidendrum bicornutum*, and other warmth-loving species.

Another house had a good batch of winter-flowering *Calanthes*, and fine varieties of *Cattleya Lawrenceana*. A long lean-to house had a fine lot of *Dendrobiums*, principally hybrids; and an adjoining larger house held the taller *Dendrobiums*, *Cattleya Warscewiczii*, and *C. Dowiana* varieties. Here, near the glass in the front of the house, all spare bulbs of the best *Dendrobiums* are laid on moss, and afford a continuous supply of young plants.

THE FRUIT HOUSES

are extensive, and in keeping with the rest of these fine gardens, the several large vineries being well cropped and in fine condition. So also the Peach, Nectarine, Melon, and other fruit houses, all of which are neatly kept.

THE KITCHEN GARDEN.

is well cropped with vegetables and fruits, and the borders are brightened with the flowers of the *Ranunculus*, *Anemones*, and other things, some of which are plants on trial or stock plants. The Highbury gardens have of late not had so much attention from their owner as usual, the affairs of State taking up the greater part of his time and energy. They may be considered as a kind of political barometer. When the master is busy in them, and contented, the situation has brightened, but when he is away for a long time it may be assumed that the political atmosphere is clouded, and something not working quite as it should. Let us hope that the day may soon arrive when the normal condition will be resumed.

HOME CORRESPONDENCE.

MR. ROBERT FENN.—I should like to say a few words on your subscription fund for Mr. Robert Fenn. I met him many years ago at the time of his very successful experiments in improving the quality of Potatoes; I believe he did other good gardening work, but that Potatoes were his strong point. I think that there must be horticulturists and lovers of their gardens who will think as I did—that now that Mr. Fenn is old, and has had an accident, and is not well off, that a little money-help to such a useful old stager would be desirable. I hope that this note may have the effect of inducing some of my gardening friends to send you a few additional contributions to your list of subscribers. *George F. Wilson, Heatherbank, Weybridge.*

DROSELA LONGIFOLIA.—In company with the common *Sundew* (*D. rotundifolia*) I found recently in great quantity the oblong-leaved *Drosera longifolia* not far from the shores of Lough Neagh. The Marsh *Andromeda* (*A. polifolia*) also occurred on the banks of ditches in the peat bog. *A. D. Webster.*

THE GROWTH OF BULBS IN IRELAND.—I think it is about time the country called Ireland should be recognised as a bulb growing land. I am just sending three bulbs of the wild *Narcissus maximus* of the south of France, and to ask what you think

of them. When I got the stock some fourteen years since, they were of the size of Snowdrops. We have a soil and a country; we have also a people who, if properly managed, could carry the empire of industry far; and the soldier's courage to back it up. *W. B. Hartland, Ardcairn, Cork.* [The bulbs sent were as fine examples as any that come from Holland. Ed.]

HYBRID BLACKBERRIES.—I gather from a reference made to the Loganberry by a northern firm of nurserymen, that they suspect the new hybrid "The Mahdi" to be the same thing. The public has so far had little chance to become familiar with the Loganberry, which is stated to be the product of a cross between the Aughenbough Blackberry and the Red Antwerp Raspberry. I have never yet heard that the above named Blackberry is grown here. Just recently the Rev. W. Wilks brought ripe fruits of the Loganberry, of which by the bye he spoke in high praise, to the Drill Hall. Those fruits were of good size, roundish, quite black, and parted freely from the stem, having no core. They were pleasant to the taste, but I should greatly prefer good ripe fruits of *Rubus laciniatus*. The Loganberry is much more a Blackberry than a Raspberry. The Mahdi is, on the other hand, one of Mr. Seden's hybrids, the parents being *Belle de Fontenay Raspberry* and the common Blackberry. The fruits are large, almost of the size and shape of those of *Superlative Raspberry*, and of the colour of well-ripened Mulberries, or reddish-violet. It has also all the habit of the Blackberry. It is thus seen that the Loganberry and The Mahdi, though both *Rubus* hybrids, are very dissimilar. The fruits of the latter have more piquancy than have those of the former. But after all the most remarkable product of *Rubus* hybridisation is the Golden Queen Raspberry, which you figured last year when it obtained a First-class Certificate. This is another of the remarkable productions of Mr. Seden for Messrs. Jas. Veitch & Sons, from crossing the finest of all Raspberries, *Superlative*, with the finest of all Blackberries, *Rubus laciniatus*. But the product is a Raspberry having very spiny growths, and fine rich flavoured, bright yellow fruits, borne abundantly. With such beginnings, what may we not eventually obtain by hybridising? *A. D.*

THE AUBERGINE.—In the spring I obtained seeds of three kinds of Aubergine from Messrs. Vilmorin, Andrieux & Co. of Paris. They were the following:—Aubergine *Violette Longue Hâtive* (early long purple), *A. Violette Ronde* (round purple), *A. Violette Naine très Hâtive* (early dwarf purple). They were all grown in pots in a greenhouse, and the result of all three was shown at the Drill Hall meeting of August 28. There is no difficulty in growing the Aubergines, especially in the south of England and Ireland. It is treated exactly like the Tomato. If the seeds are germinated early in a little heat, they can be subsequently grown in pots in a greenhouse, without any heat but that of the sun. At the same time that the Tomato is planted in the open, the Aubergine can also be planted, but of course it will then fruit later than those under glass. The very early dwarf kind is very prolific, and is admirably suited for cooking as "Aubergines farcies." It seems a pity that this fine vegetable has never been grown in the British Isles for market. When the Tomato was first introduced, there was no demand for it; and there is no demand for the Aubergine now. But the demand for a good vegetable will grow, if people were to see it in the shops, and try it, by having it cooked *secundum artem*. All three kinds that I have tried are fully described in Vilmorin's *Vegetable Garden*. *E. Bonavia, M.D., Worthing, September 1, 1900.*

CARNATION MRS. T. W. LAWSON.—Mr. R. Sydenham expresses disappointment in respect to this variety. I am afraid Mr. Sydenham has not followed very closely the manner in which this was placed upon the market, and how it was "boomed" as only our American cousins are capable of. In fairness, Mrs. T. W. Lawson should not be judged by a few chance blooms which are produced by plants imported in the spring of this year. What would be said of our best varieties if judged in America from blooms produced by plants which had only been received from this country about three months previously? Mr. Sydenham seems to be surprised at the "saw edge" petals, but imbricated petals are, to a great extent, the standard of excellence among American growers; it is purely a matter of taste. How

many now grow the formal and smooth edged, petalled show Dahlias for decorative purposes? Would they not soon drop out of cultivation were it not for the comparatively large prizes offered by many exhibition committees? How many of the smooth show Pansies are grown for any purpose beyond that of exhibition? The more irregular formed Cactus Dahlias have done much to make Dahlias popular, and now, as the newest and best thing, we have them with the petals fringed at the tips or edges. It is the public which have made Cactus Dahlias, fancy Pansies, and the ragged Japanese Chrysanthemums, popular. Among Carnations it is the same. The less formal, irregularly marked border varieties have made them popular. Carnations have in this country been grown mainly for show purposes, and Mr. Sydenham judges Mrs. T. W. Lawson from the exhibitor's point of view. It must be admitted that it would make a sorry picture, plastered out on 3 inches of cardboard, and shown on the usual hideous green board. The American growers would not countenance such a method of exhibiting, and would say much harsher things about such than we can in respect to the "saw-edged" petals. In America Carnations are grown under glass more extensively than in any other part of the world. The blooms are not judged from the standard of as to how they will answer the exhibitor's aim, but rather how the public will appreciate them. They are mainly grown under glass, and growers have to take into consideration how many good and useful blooms can be produced from a given space, and not a bloom per plant as exhibitors have to grow them here. When staged for certificates, twenty-five or fifty blooms of the variety have to be put up; and one essential point is that the stems shall be of a good length, and stiff enough to carry a good-sized bloom without any support whatever; and can anyone say that the Americans are wrong? No; whilst prepared to admit that I prefer a smooth-edged petal in a Carnation, I still think that a properly imbricated petal, as many of the American varieties have, must have a charm for some, and it is a taste which may yet be acquired by many in this country. It was not long ago that the Royal Horticultural Society gave an Award of Merit to Mrs. J. G. Muir, a very irregular and much fringed petalled variety, but with an exquisite perfume, a point which seems to have been quite ignored in the rage for blooms which look well with a cardboard support. *W. J. Godfrey, Exmouth, September 1.*

WELL OF WATER IN A TREE.—Visitors to Coney Island, on Lough Neagh, are shown a Beech tree with a deep spring between the two main stems, containing about 18 inches in depth of water. The guide describes it as a spring which even during the hottest summer never fails to supply a draught of pure water to the wayfarer. An examination, however, proved that no such thing as a spring exists, the cleft between the main trunks being natural, and the rain-water conveyed thither by the fluted trunk which is common to the Beech. Moreover, water can only rise to its own level, and no part of this pretty island nearly approaches that of the water in the tree-trunk. *A. D. Webster.*

FERTILISATION OF THE BLOSSOMS OF SWEET PEAS.—It has become such an article of common belief that Pea flower-fertilisation takes place prior to the expansion of the bloom, that one is a little surprised, on reading Mr. Druery's note on the action of a bee on Sweet Pea flowers, to find it assumed that bees or other insects have anything to do with Pea flower-fertilisation. Seedsmen have such absolute assurance that insects have nothing to do with such fertilisation, that they grow both Sweet and edible Peas in immense quantities side by side, and seldom or never find crosses resulting. Peas, indeed, are far from being easy flowers to artificially fertilise, and the flowers have to be specially manipulated some time prior to full expansion, and the anthers removed, or the fertilising process will have been completed. My own experience of Pea-flowers is that bees frequent them but little, which may be because so many other and more desirable honey-producing flowers are then in bloom. The great abundance of varieties, both of Sweet and edible Peas, complained of, and which no growing can check, is the product of artificial fertilisation, and it is one of the characteristics of these crosses with the Lathyrus family that some three or four diverse varieties will often

come from one pod, the production of one cross only. Still, that is nothing to what results from the Potato, the flowers of which are rarely insect fertilised, when from one artificial cross will come from one seed-apple or fruit sixty to eighty diverse varieties. With respect to the complaint of too many Peas, there is the practical reply: no one is compelled, nay, not even the seedsman, to grow them all, or one half of them. All he is asked to do, and that he does, is to grow good selections of the best. The complaint is like that made years ago that London was too big. Now it is double the area, and still gets bigger. *A. D.*

GROWTH OF BAMBOOS.—It may be interesting to those who cultivate hardy Bamboos to know how the growth of the hardy kinds out-of-doors has been encouraged in this part of Cornwall during the last four months, in spite of the changeable weather we have had. I therefore send you a list, named after Mr. Freeman Mitford's *Bamboo Garden*, of those growing out-of-doors in this garden, giving the height of each at the present time. Some of the larger kinds of *Arundinaria*, as well as of *Phyllostachys*, made, when in full energy of growth, an increase in height of from 2 to 3 in. or more during each night. The grand specimens of *Arundinaria nobilis*, of which there are many now growing here, and are the offspring of the original plant from North China, which seeded after thirty-three years of life, and died in 1872, are now twenty-eight years from seed, and therefore, I fear, drawing near to their end, and will cause, when they seed and die, sad gaps in the gardens and grounds. But I have from time to time taken off slips from the roots and side-shoots, to ascertain if these young scions will survive the death of the parent plant, or whether the same root will convey death in its rhizomes to the offshoots. I hope other gardeners will make this experiment, and report the result. All the Bamboo tribe do not, I believe, die entirely after seeding. In my list, given herewith, I mention that *A. spinosa* seeded with me last year; but a young culm from the old stump is now alive. The old stump was 5 or 6 inches in circumference. The growth of Bamboos in the gardens of Menabilly, Cornwall, up to September 1, 1900:—*Arundinaria nobilis*, 22 ft. high; *A. Falconeri*, 16 ft. 6 in.; *A. spathiflora*, 11 ft.; *A. japonica* (Metake), 15 ft. (wanderer); *A. Simoni*, 16 ft. (wanderer); *A. Simoni variegata*, 14 ft.; *A. Simoni albo-striata*, 8 ft. 9 in. (wanderer); *A. falcata*, 13 ft. 6 in. (young growth August, September); *A. Hindsii*, 13 ft. (very distinct and compressed); *A. anceps*, 8 ft. to 11 ft. 6 in. (wanderer); *A. chrysanthia*, 4 ft. 6 in.; *A. aristata*, 5 ft.; *A. Fortunei variegata*, 4 ft. 4 in.; *A. humilis*, 2 ft. 9 in.; *A. Khasiana*, 10 ft.; *A. macrosperma*, 5 ft.; *A. nitida*, 10 ft.; *A. palmata*, 6 ft. 6 in. (wanderer); *A. Ragamowski* or *tesallata*, 5 ft. 9 in.; *A. pumila*, 3 ft. 6 in.; *A. pygmaea*, 2 ft. 9 in.; *A. marmorea*, 6 ft. 6 in. (wanderer); *A. disticha* (nana), 1 ft. 10 in. (wanderer); *A. scriptoria*, 5 ft. 6 in. (delicate); *A. nagashima*, 5 ft.; *A. Mazeli*, 9 ft. 6 in.; *A. edulis*, 5 ft. 9 in.; *A. (?)*, like *A. nagashima*, 5 ft. 6 in.; *A. spinosa*, spinous, an old stump, but it sent up young growth 6 ft., which seeded, but did not die, 1899, not out of doors; *Arundo donax*, 12 ft. (in swampy ground, out of doors); *Phyllostachys mitis*, 13 ft. 6 in. to 18 ft. 6 in.; *P. Quiloi*, 16 ft.; *P. sulphurea*, 13 ft. to 16 ft. 6 in.; *P. viridiglaucescens*, 15 ft. (wanderer); *P. flexuosa*, 13 ft. 6 in. (growing still, Sept.); *P. violascens*, 13 ft. (wanderer); *P. aurea*, 13 ft. 6 in.; *P. Marliacea*, 10 ft.; *P. Castillonia*, 11 ft. (a lovely plant); *P. bambusoides*, 9 ft. 6 in.; *P. heterocycla*, 8 ft. 6 in.; *P. gracilis*, 8 ft. (distinct slender foliage); *P. nigra*, 9 ft.; *P. nigro-punctata*, 13 ft. 6 in. to 17 ft. 6 in.; *P. vittata vulgaris*, not out of doors; *P. quadrangularis*, 8 ft. 6 in. (wanderer); *P. kumasacaviminalis*, 2 ft. 8 in.; *P. heponis*, 13 ft. (now flowering and seeding abundantly, preparatory to dying). *Jonathan Rashleigh, Menabilly, Sept. 4, 1900.*

LARGE BOG OAK.—To what an immense size the Oak grew in Ireland centuries ago may be gathered from an inspection of a boat that was recently unearthed by the shore of Lough Neagh, and which had been hewn from one single block of Oak. Judging from present dimensions, the tree must have exceeded 20 feet in girth, but in all probability was much larger, and with but little taper for 20 feet in length. Oars of Oak were also found, all the timber being black as jet, and extremely hard where not subjected to the action of

the air. Alongside this boat were discovered five smaller ones, each about 6 feet long, and hewn from a single log of Oak. About thirty stones, each as big as a man's fist, were found in a heap towards one of the ends of the larger boats. Some antiquarians who have examined these primitive boats, are of opinion that they are relics of the Danes, but I am of opinion that they are of much earlier date. Why the British Museum authorities were not apprised of the finding of so interesting relics of the past it is hard to conceive, for then they might have been suitably preserved instead of crumbling to pieces as at present. *A. D. Webster.*

A ROYAL HORTICULTURAL SOCIETY'S CENSOR.—I would advise "A Member" of the Floral Committee not to push too far his suggestion as to the appointment of a censor, whose business it would be to determine what of the things sent for presentation to his committee be fit for that purpose, lest he be selected to discharge the duty. It would be about the most unenviable post in horticulture. But then it is really the work of the committee to deal with the matter in a body, by refusing to notice rubbish. Did not the exhibitor, to use a sporting phrase, get a run for his money, that is, have his exhibit placed before the Committee, what a hubbub there would be! The pity is, and the remark applies to many things which come before the Fruit Committee also, that some exhibitors learn nothing, but always persist in regarding their small ducks as swans. Judging by what we see in the world generally, such egotism and ignorance seems likely to have a long day. *D.*

COOKING VEGETABLE MARROWS.—In your issue of August 25, you give two receipts from Dr. E. Bonavia for cooking Vegetable Marrows. Both are doubtless excellent in their way, though perhaps rather beyond the resources of any but a large establishment. The worthy doctor may be one of those who think Marrows, like pike and other coarse fish, need elaborate cooking or numerous condiments to make them palatable; or he may simply desire to enter a protest against the ignorance of English cooks, who peel, cut up, and water-soak one of the best of vegetables. For the benefit of those who have not always command of "good stock, purée of Tomatos, chopped Onions, cream, Nutmeg, Sultana raisins, and grated Parmesan cheese," allow me to give a receipt which is very simple, and will, I believe, commend itself to all who try it. Get young Marrows (those in the London markets are usually three or four times as large as they should be), boil them whole, without peeling or scraping them, and serve with or without melted butter. *Gurteen.*

MOONOCK ISLAND.—There is a small island on Anagariff Lake, not far from Lough Neagh, known as the Moonock Island. I had long wondered to what native plant the name of Moonock had been locally applied, particularly as the fruit was annually collected for the making of jam and tarts. My surmise was, however, correct, for on visiting the ground last week I found it literally carpeted in parts with the Cranberry (*Vaccinium oxycoccos*), which my guide said was the plant known as the Moonock. Another island on the same lake makes periodical trips from one end of the sheet of water to the other, the direction being influenced by the prevailing wind. It is simply an extent of peat that has become detached by the action of the water, and is covered with Heath and a Birch or two. *A. D. Webster.*

THE SALE OF POISONS.—Referring to the letter of Mr. Chas. T. Druery in your issue of the 25th Aug., in which he details his difficulties in purchasing the XL-All insecticide, Mr. Druery does well in heading his communication "A Pharmaceutical Absurdity." The difficulty now experienced in obtaining any preparation for horticultural purposes, where the same contains poison, is enormous. Why is this so? Because, speaking generally, any preparation whatever containing poison can only, as the law at present stands, be retailed by a registered chemist. When this law was enacted (Pharmacy Act, 1868), it was never contemplated by the Legislature to give to any body of men the sole right to retail poisons for all purposes, or, in effect, to create a monopoly; the intention was to safeguard the public. Now every horticulturist knows that he is obliged to use poison in the form of compounds containing poison, in the course of his business, and he says that

he should be in a position to purchase what he requires where he wishes. Why should he be compelled to go to his chemist (who is a dispenser of medicines, and has no technical knowledge whatever of horticulture) when his inclination and interest direct him to the seedsman or the florist? The law says he must go to the chemist, and there is an end of the matter. This state of things is truly an absurdity; but it is also a wrong, and one that calls for speedy amendment. Can nothing be done? and what are horticulturists thinking about to calmly submit to be harassed by, and prosecuted at the instance of, a body of men who neither care for nor know anything of—*Horticulture*.

FOREIGN LEECHES.—In the *Irish Naturalist*, for September, the first place is given to an article by Dr. Scharff on the "Land Planarians of Ireland." He gives three figures, one of which, together with the description, corresponds with that relating to the leeches from Redleaf Gardens. It now appears that the animal has been named *Bipalium kewense*, and *Placocephalus kewensis*. No allusion is made to the discovery of the animal fifty years ago in Regent's Park. Scharff's figure does not show a sucker at the posterior end. In this it corresponds with the specimen from which my own figure was drawn. It is given by Prof. Van Graff (*Monogr. der Turbellarien*, pt. ii., 1899), who thinks it belongs to the East, and has been introduced thence into England, Germany, Madeira, Brazil, Hong Kong, Australia, and elsewhere. It is now recorded for Ireland. Thus we are gradually tracking the creature home. *A Sussex Naturalist*.

NURSERY NOTES.

TUBEROUS-ROOTED BEGONIAS AT THE YEOVIL NURSERIES.

WHAT is to be the future of the tuberous Begonia? was the question I put to Mr. B. R. Davis, of the Yeovil Nurseries, as we walked through houses that were filled with glorious double and single flowered Begonias. Mr. Davis calls himself a "Begonia specialist," in the sense that it is a flower he has laboured earnestly for many years to improve. Here, in this quiet town, he has persevered, working towards the realisation of high ideals of quality, flowering the plants, fertilising their flowers, sowing the seeds, and planting out seedlings to flower in every part of his nursery. Under glass we see large specimens of two and three year old, luxuriant and robust, producing large and symmetrical double blossoms, and single varieties of perfect shape, with stout and finely-rounded petals, in which the side petals have in time become so enlarged that they rival those which surmount the flower and form its base; and we wonder, Can the march of improvement go farther? and what is to be the outcome of that which can be seen to-day? Outside in the open there is to be noticed line after line of beds of seedlings, a series of floral parallelograms, unfolding their blossoms so that something of their possibilities may be seen and noted. These seedlings are raised from carefully fertilised seed; the chances of good results are very hopeful.

Mr. Davis has been a cultivator of the Begonia for a period of twenty-one years. After filling for a time a responsible position in the nurseries of the late Mr. John Scott, he became the proprietor of the Yeovil Nurseries in 1871, and soon after Begonia Pearcei came into his hands, and he began to work up a stock of it. Then, a little later on, some tubers of new varieties from the earliest introduced forms were bought, and he at once commenced to cross these with B. Pearcei, and from these obtained improved varieties. B. boliviensis and B. Freebelli were also used as parents in both directions; and so, contemporaneously with what the late John Laing was doing at Forest Hill, and Henry Cannell at Woolwich, worthy work was being done at Yeovil, and a good foundation laid. Mr. Davis could see there were great possibilities in the flower, and threw himself into the work of improvement with considerable energy.

His first seedlings were mainly of crimson and

scarlet shades, but as varying tints put in an appearance, they were utilised for cross-breeding as soon as good double flowered forms were procurable. These were at once pressed into service, and the development of the double-flowered Begonia at Yeovil went forward with rapid strides; but it can be justly said that Mr. Davis has aimed at the highest quality. Anyone visiting the Yeovil Nurseries at this season can see house after house in which double-flowered Begonias appear to be of the finest character, the centres full, symmetrical, and solid, not "pockety," as the old florists used to term their Hollyhocks, but a mass of central florets, forming a dense cushion. As a matter of course increasing sizes come with improvement, but distinct tints of colour, or combinations of colour, allied to the most perfect symmetry, compel admiration on every hand. There are pure whites and clear yellows, blush and pink, rose and carmine shades, rich scarlets and crimsons, some of the latter shading to maroon. There are charming Picotee-edged varieties among the singles, some have broader petal margins, but double and single are alike superb. Rose tints are seen deepening into magenta, yellow to apricot, orange, and a suspicion of bronze, amber, and salmon tints are numerous. Some of the crimsons, both double and single, are brilliant in the extreme. Violet, mauve, purple, and blue shades are as yet unrevealed; they are hoped for, though they may not lie within the range of possibilities of the flower. Novelty of tint is dear to the heart of the Begonia raiser. Buonarrotti wrote:—

"Never did sculptor's dream unfold
A form which marble doth not hold
In its white block."

And if, as they say, "chalk through patience becomes a ruby stone," it may be that blue in the Begonia is not a floral impossibility.

Mr. Davis is certainly developing one peculiarity in the Begonia, namely, the crested petal, which is shown by the issuing from near the base of the segments of a feathery or crested protuberance, which on some of the varieties is singularly handsome. It first appeared in a rudimentary form four years ago; it was encouraged to develop, and with the present results. We are so accustomed to the clear, smooth petal in the Begonia that this added coloured matter is certainly novel and striking. It seems to have appeared simultaneously with Mr. Davis, and with a continental grower. It was noticed to vary; it changed in form and increased in bulk, and now there can be seen large single blossoms, each segment of which is overlaid with the crested growth. He states that he saw in Ghent last year, three or four plants having this crested character on their corollas, which had originated two years before. Each succeeding year has produced a further development, and the petals of some of the double varieties begin to display the crested character, but in a less pronounced form.

He still continues to name certain of his Begonias, both double and single, and this means that they have to be propagated. Propagation by cuttings is a tedious process, and is not always satisfactory; the easiest method is by division; the tubers are started into growth on the surface of some soil, and when the young shoots are two inches or so in height, the tuber is cut into two, three, or four pieces, these again are placed on the surface of the soil, and when the cut has dried somewhat, the divided portions are potted. Seeds are sown in January or February, and successive sowings are made at intervals of two or three weeks to equalise labour. The seedlings are reared in shallow trays: they are as soon as large enough pricked out into shallow boxes, one hundred in a box; and when these are strong enough they are planted out in the open to flower, generally early in June. The plants which are grown on in pots appear to do best with three shifts. Mr. Davis states that a Begonia revels in a free soil, and should not be suffered to become pot-bound.

A development in the Begonia trade of late years is that of the sales of dry roots. Mr. Davis gets out his Begonia catalogue by the first week in January. Orders then come in, and great quantities of dried roots are despatched through the post, and to many parts of the world. The tubers are well dried before being sent to any distance; an excellent system of packing is followed. The despatch of dried tubers goes on until June. In April, tubers which have been started into growth, are despatched; and at the bedding season many plants are supplied. Certain distinct colours are grown in quantity for bedding purposes, and they are in considerable demand.

That the Begonia flowers will go on increasing in size seems certain; and some are already saying the flowers are becoming too large, but all improvements made in flowers are accompanied by an increase of size, and this appears to be an inevitable result. Presently there will in all probability come a season of revolt against size, and then perhaps a new departure will be made with some small-flowered types. Nature appears to have placed limits to development in some flowers, and when the utmost limit is reached in the case of this flower, some lateral line of advance may be disclosed. In any case, there is the probability that the tuberous-rooted Begonia will remain a popular plant for many years to come. *R. D.*

FERN SPORES.

ALTHOUGH doubtless in many of the larger seaweeds we have fair parallels, and even more striking instances of enormous differences between the resulting plant and the microscopic spore which produced it, Ferns among land plants certainly are pre-eminent in that respect. Before me, as I write, is a sheet of plain notepaper, upon its surface there is apparently nothing whatever, and certainly nothing to mar its perfect whiteness. Lifting it, however, and glancing obliquely along its surface there is a faint suspicion of brownness. That is absolutely all that the eye can detect, and yet I would undertake to raise several thousand large Ferns from the spores which are lying there, and if they chanced to be Tree-Fern spores, they would need several acres of ground to accommodate them. Doubling the paper in the centre and giving it a tap, a brown line appears along the fold, and scattering this again upon a microscopic slide, it is seen that not one or two but scores of thousands of little oval bodies are present, each one of which is capable of producing one or more Ferns. Seeds are often very small, but no seed can rival the spore in minuteness. Small as they are, however, and uniform in appearance as they may be in the heap, the expert can detect very appreciable differences in the spores of different species.

Among our British Ferns, the most diverse examples are seen in the common Polypody, P. vulgare, and the Royal Fern *Osmunda regalis*, as compared with the bulk of the other native species. Those of the common Polypody are several times as large as the generality of Fern spores, and of a bright golden-yellow, those of the Royal Fern are a light olive-green, while those of the rest of the British Fern-tribes are distinctly brown, and distinguished mainly by smoothness or various grades of ribbing. If at this time of year we examine Fern fronds, we will find most of them bearing immense numbers of spore-heaps, arranged in dots or lines on the under-surface, or lying under a thin fold, extending along the margins. In the Regal Fern, the so-called flowering Fern, we shall find them congregated in bunches at the contracted tips of the fronds, imparting a false appearance of inflorescence, whence the popular name; and if we are versed in Fern-lore, we may unerringly name the family from the mode in which these spore-heaps are arranged. The Polypody family throughout the world is recognised by isolated round heaps without any cover; the Lastreas and Shield Ferns have also isolated heaps, but with a kidney-shaped protective cover on the first-named genus, and a

Mushroom-shaped cover on the second. All Spleen-worts have the heaps in lines, on the under surface; all Pterises have them in continuous marginal lines, with a thin membranous cover formed by the edges of the fronds being turned in and over them; *vide* the Bracken as a type. The Bladder-Ferns get their name from a thin bladder-like cover on dot spore-heaps; and, in short, every genus has its own peculiarity in this respect, for which we must refer to text-books. We shall not, however, get very far in such investigations without being struck by the enormous numbers produced, not merely on a Fern-plant, but on a single frond; millions, literally millions, being an ordinary annual crop. This being so, one wonders that the world is not overrun with Ferns, until a little consideration brings to mind the fact that Nature is only so redundant when the risks in the struggle for existence are proportionately great. The tiny Fern spore takes months to develop an established Fern. For a long time, even when it has been fortunate enough to fall in a congenial spot for a fair start, its continued existence depends upon absolute non-disturbance, and a continual supply of moisture: a hot, dry wind nips tens of thousands into perdition; mosses, fungi, worms, &c., all occupy the same area, and out in time tens of thousands more, until of all the millions, but a few survive, and, maybe, none at all. If, therefore, we determine to try and raise Ferns from some of these spores, it is clear that the more we conform to their needs and ward off hostile attacks of competitive life, the more likely are we to transform our faint brown stain aforesaid into an umbrageous Ferny dell. Fern growers attain this object in various ways, and consequently with varying success; but success is fairly certain if we first sterilise the soil we sow upon, so that only the Fern-spores germinate, and then prevent the sowing from getting dry. These are the two essentials, and in our own practice we secure them thus. To sterilise the soil, we take a small pot or pan, put in plenty of small crocks as drainage, and fill up with a mixture of leaf-mould, sand, and loam, with a sprinkling of nubbles of loam on top as a finish; we then lay a piece of paper on this, and pour absolutely boiling water from a kettle until not merely is the mass saturated, but the water runs through scalding hot. This properly done, kills all insects, insect-eggs, and the spores of mosses, fungi, &c., which teem in all soil, and otherwise would form a nice little menagerie of our Fern pan, instead of the miniature Fern paradise we are aiming at. Meanwhile, we shall have taken a Fern-frond bearing ripe spores, and laying it on glazed paper, acquired our brown stain, being the spores shot out of the capsules as they dry and burst. Satisfying ourselves by getting these on a glass slip, and inspecting with a lens, that we have sufficient, we gently tap the slip (or the paper) over the pan when cool, and immediately put a piece of glass over it to keep it close and exclude floating germs and spores of other things as far as possible. This pan should now be put either in a Wardian case or a shady damp corner in a conservatory, where it is not likely to get dry, and then severely left alone. Should it get at all dry, stand the pan for an hour in an inch of water, but do not water overhead. In a week or two, a sort of green tinge pervades the surface; each little spore has sent out a little chain of cells and a root-hair or so; presently these expand, and a multitude of little green scales result. It is now that the mind fully appreciates the need for thin sowing, for nine times out of ten at this stage, it is obvious the crop is not only too big to handle properly, but that the youngsters are handicapped terribly by over-crowding, necessitating pricking out little patches into fresh sterilised pans, in order to give all a chance of development. The moral is: the thinner the sowing, in reason, the better, unless, of course, the Fern is extremely valuable, and it is intended to retire on the proceeds of its distribution, "a consummation devoutly to be wished," but rarely the lot of the

British fernist in these degenerate days. Given elbow-room, each little scale will now proceed to carry out a tiny flowering process on its underside, and eventually little fronds will be observed pushing up in all directions through the indentation of the scale. From this point onwards, it is simply a case of pricking out and giving more room as required, for the crucial stages are all passed when the fronds appear. If, however, the sowing be choice or of mixed forms for an intended cross, the most interesting period for the selective cultivator has now arrived. At first, the little ones appear fairly uniform, but presently, as the second and third fronds shoot up and increase in size, the varietal characters begin to assert themselves, and it is for the grower now to "spot" the particular genus, and weed out the "duffers" or "rogues" if there be any, so that the survival of the fittest shall be his fittest, and not those of Dame Nature's, which are often vigorous in proportion to their worthlessness from man's point of view. *Chas. T. Druery, F.L.S., V.M.H.*

SOCIETIES.

ROYAL HORTICULTURAL: CHISWICK.

AUGUST 30.—A meeting of the Fruit Committee was held here on the above date, Mr. J. Hudson (Chairman), and Messrs. J. Wright, G. Wythes, H. Asling, A. F. Barron, W. Farr, and A. Dean being present, two short of a quorum.

A very large collection of Tomatos in pots under glass, and also growing in short rows outdoors, on a warm border, some thirty in number, were inspected. Of those in pots it was agreed to award three marks to *Chemin Rouge*, a now popular variety; and to a considerable number that had previously received awards, those were confirmed. Outdoors, where the plants were all in excellent condition, but rather late, three marks, as good outdoor varieties, were awarded to *Conference*, *Tit Bits*, *Eclipse*, *Comet*, *Cherry Ripe*, *King's Seedling*, *Golden Nugget*, *The Cropper*, *Veitch's Glory*, *Wonder of Italy*, or *Semper fructifera*; *Ravenscroft Red*, *Golden Drop*, *Supreme*, and *Frogmore Selected*. When so many varieties show up so well it is evident that we have no lack of good varieties of Tomatos.

A large number of the later Potatoes, all still green and vigorous, many having inordinately strong tops, were lifted. Not a few gave far more of tops than tubers, some having badly grown out. Still, not a few others gave capital, clean crops, not a vestige of disease being seen in any of the tubers. Eleven were sent to be cooked, and tasted, and of these eventually three marks were awarded to *Sir J. Llewellyn*, a longish white round, and an immense cropper; *Sutton's Supreme*, a well-known variety; *Centenary*, white round; and *Baden Powell*, a heavy-cropping kidney that closely resembles *Beanty of Hebron*. It was agreed that when fully ripe, probably in December, *Duchess of York*, *Superb White*, *Beehive* (three of Mr. Kerr's), and the *Duchess of Buccleuch*, be again cooked, as all were of considerable promise. Seldom have Potatoes kept green so late in the season as they now are.

PARIS EXHIBITION.

THE temporary show of the 22nd ult. presented no special novelty. The Gladioli were superb; those of M. VICTOR LEMOINE formed a magnificent and diversified group; those of Messrs. CAYEUX & LECLERC, of Paris, and VILMORIN were also very beautiful.

Fine collections of "Reine Marguerites," especially those of MM. VILMORIN, ANDRIEU ET CIE., and M. GRAVERAT, afforded evidence of excellent cultivation.

The Dahlias presented by MM. DUPANLOUP, VILMORIN, ANDRIEU ET CIE. were likewise good, but with little novelty, except a variety called *Britannia*, shown by Messrs. VILMORIN.

The collections of Roses, vegetables, and fruit were numerous and excellent. M. DESIRÉ BRUNEAU, of Bourgla Reine, near Paris, had a fine collection of fruit-trees in pots, well cultivated, and laden with fruit.

M. MAYNE, an amateur of Boulogne-sur-Seine, presented a small group, containing some hybrid *Cypripediums* and a good *Vanda tricolor* *superba*.

Messrs. REONIER, CAPPE ET FILS, Beranck, had good collections of ordinary varieties.

The only collection that contained new plants was that of M. CHARLES MARON, of Brunoy, who had *Cattleya Victor Hugo* (Leopoldi × aurea), which has the perianth segments rich brown; *Lælio-Cattleya Madame A. Chantin*, a fine variety of L. × Harry Greenwood; L. Linarti, a variety of L. × Attila; good varieties of L. L. × Andreana, *Cattleya × velutino-Luddemanniana*, &c.

The firm ENFANTS D'ANTOINE CHANTIN exhibited a good group of plants, with ornamental foliage plants, *Zamia*, *Katakidozamia*, and other Cycads; *Dieffenbachia*, large *Anthuriums*, *Philodendrons*, *Alcasias*, &c.

The Phloxes must also be mentioned, such as the dwarf, large-flowered variety from Messrs. VILMORIN, ANDRIEU ET

CIE.; the Camas of MM. DUPANLOUP, BILLIARD, and BARRÉ; the fine collection of foliage plants exhibited by M. DELLÉ, of Paris; a lot of *Lobelia*s from M. FÉKARD; and from the same exhibitor a new *Reine Marguerite* of dwarf habit, with stiff flowered stems, all deserve mention. *G. T. G.*

ROYAL HORTICULTURAL OF IRELAND.

AUGUST 28.—The autumn exhibition under the auspices of the above Society was held on Tuesday, the 28th ult. The display was made in marquees in Merrion Square, Dublin, and the weather was good. Partly owing to its being horse-show week, the attendance was abnormally large, and at periods in the afternoon the tents were packed. The show was opened by Her Excellency the Countess CADOGAN.

The number of entries made showed a decided increase, but owing to unsatisfactory weather, some of the hardy flowers, especially those from amateurs, were rather weak. Sweet Peas were noticeable, and so were Gladioli, but Dahlias and Begonias are to be excepted. Having described hardy flowers as weak, we must except the collection from Lord ASHTOWN (gr., Mr. Porter), as it was a most meritorious exhibit, and was awarded Lord Ardilaun's Cup.

In the classes for fruit, the amateurs showed conspicuously well; of those, Grapes were especially good. Peaches, Nectarines, Pears, Plums, Apples, Figs, Melons, and Currants, were satisfactory. Vegetables made a fine display; Ailsa Craig Onion was much in evidence, and Tomatos, Cucumbers, &c., were capital.

Among the non-competitive exhibits nearly all the important growers in Ireland were represented. Chief among cut blooms were Begonias, but the blooms were a little backward, especially the double varieties. Messrs. DICKSONS, both of Newtownards and Belmont, staged Roses grandly, and their exhibits recalled summer owing to the colour and freshness of the blooms. The Newtownards firm showed some new Roses, the best of which was one called *Liberty*, a miniature bloom, with great substance of petal, in colour a velvety-crimson. The Belmont firm also showed Dahlias.

Gladioli were shown by Messrs. KELWAYS, of Langport, Somerset, their collection comprising two hundred named spikes, whilst hardy flowers and Carnations were fittingly shown by Messrs. DICKSONS, of Chester; CLIBRANS, of Altrincham; and FORBES, of Hawick.

The Secretary (Mr. HILLYARD) has done much to secure a success for this show.

CUT FLOWERS.

For a stand of twenty-four show Dahlias, consisting of at least twelve distinct varieties, the honours fell as follows:—Lord ASHTOWN, Castle Durrin, Queen's County, 1st (gr., Mr. J. McKellar); 2nd, Marquis of DOWNSHIRE, County Down (gr., Mr. J. Bradshaw).

For a similar stand of Cactus, Mr. Rigg, gr. to Lord CLONCURRY, Lyons, Hazlebach, was 1st, with faultless blooms of *Mary Service*, *Mrs. Peart*, *Ellen Pellissier*, *Arachne*, *Kingfisher*, *Alfred Vasey*, *Primrose Dame*, &c. The same exhibitor gained a similar place for twelve bunches of *Pompons*; also for a stand of twelve decorative varieties; whilst Major BURROUGHS, Gilttown, county Kildare, and the Hon. Colonel CRICHTON, Mullaboden, Ballimore, Eustace, won 2nd prizes.

Gladioli were well shown, but the competition was by no means keen. Mr. Porter, gr. to Lord ASHTOWN, Woodlawn, county Galway, was an easy 1st; and Colonel JERVIS WHITE, M.A., J.P., Wexford, was 2nd, for a stand of twenty-four spikes.

In a class of twelve spikes, Lord CLONCURRY, Lyons, Hazlebach, was 1st; and JOHN L. SMALLMAN, Esq., was a weak 2nd.

For a stand of thirty-six cut blooms of Begonias in at least twelve distinct varieties, there was considerable competition, but an excellent box of blooms was staged by Viscount ASHTOWN, Castle Durrin, Queen's County (gr., Mr. Kellar); Lord ASHTOWN being 2nd with an even lot of good blooms.

R. HAMILTON SHUBBER, Esq., was 1st for a stand of twelve double varieties; and Lord ASHTOWN 2nd. Lord ASHTOWN had a finely coloured collection of twelve singles.

Carnations were tastefully displayed, but competition was not keen; still, the blooms from Surgeon-General BEAUMONT were very fine, and the varieties were mostly seedlings of his own raising. This collection won 1st prize for twelve bunches; J. L. SMALLMAN, Esq., was 2nd.

Surgeon-General BEAUMONT also won the Jervis White Challenge Cup, value five guineas, for the best twenty-four bunches.

Sweet Peas looked well, and Mrs. BERTA DOYNE, with a collection of selfs, was awarded an easy 1st; Major BURROUGHS, D.L., with a group of selfs and striped varieties, was 2nd.

Hardy flowers, exhibited for the Ardilaun Challenge Cup, were best from Lord ASHTOWN, Woodlawn, co. Galway (gr., Mr. A. Porter). The group included *Phloxes*, *Gladioli*, *Carnations*, *Tigridias*, *Montbretias*, *Tritomas*, *Eryngiums*, *Coreopsis*, and *Liliums* in variety. Mr. H. F. VERSCHOYLE was 2nd.

FOLIAGE PLANTS.

For a group of twelve fine foliage-plants, distinct (Ferns excluded), Mrs. McCOMAS, The Grange, Monkstown (gr., Mr. Coughlan), was an easy 1st; she also took premier honours for a stand of six exotic Ferns.

Coleus were excellently shown; and Mr. Byrne, gr. to D. DRIMMIE, Esq., Booterstown was 1st, after a close contest; Mr. Kearns, gr. to Mrs. MOORE, Ashtown, Phoenix Park, being 2nd.

For pots of double-flowered tuberous-rooted Begonias, Sir R. PALMER, Kenure Park (gr., Mr. Stringer), was 1st.

FRUIT AND VEGETABLES.

Fruits, &c., formed an attractive display. For a stand of six bunches of Grapes, in at least three distinct varieties, Mr. Bradshaw, gr. to the Marquis of DOWNSHIRE, was 1st; and Lady E. BURY (gr., Mr. McKenna), 2nd. The Marquis of DOWNSHIRE also took premier place in most of the other classes. Lord ASHTOWN had exceptionally fine white Muscat Grapes. The Marquis of DOWNSHIRE had 1st prizes for Melons, Plums, and Figs. Lady EMERY BURY was 1st with Nectarines.

First prizes for vegetables were taken by Lord ASHTOWN and W. GOFFKIMM, Esq., who likewise won the two Gold Medals.

MISCELLANEOUS EXHIBITS.

Messrs. M. SANDERS & SON, Friars Walk Nurseries, Cork, had a collection of Begonias.

Messrs. R. HARTLAND & SONS, Lough Nurseries, Cork, had an excellent stand of cut blooms and fruit (Gold Medal).

Messrs. MCGREDY & SONS, Portadown, displayed Begonias well; they draped their stands with *Gypsophylla paniculata*, giving it a very nice effect. This firm also staged *Gladioli*, using sprays of *Arundo conspicua* for effect (Silver Medal).

Messrs. KELWAY, Langport, Somerset, staged over 200 spikes of bloom of *Gladioli*, but they required more space than was given them. Tall *Kentias* were used as a background, and this was one of the choicest stands in the show (Highly Commended).

Messrs. DRUMMOND & CO., Dawson Street, Dublin, displayed a group of herbaceous plants, also Conifers and Acers.

Messrs. WATSON & SONS, Clontarf, had a representative collection of Dahlias.

Messrs. OLIVER & SON, Altrincham, Cheshire, had prettily arranged stands of hardy flowers, also sprays of foliage of shrubs (Highly Commended).

Messrs. DICKSON, LTD., Chester, had also an exhibit of hardy flowers, notably Phloxes.

Mr. JNO. FORBES, Hawick, had a neatly-arranged group of Carnations and Pentstemons; amongst the Carnations, Teviot Dale and John Forbes were very fine.

Messrs. RAMSAY & SONS, Ballsbridge, had a choice group of stove plants with Lilliums interspersed, also floral designs, &c. From the Botanic Gardens, Glasnevin, Mr. F. W. MOORE staged a fine collection of stove plants.

Messrs. J. HENDERSON & SONS, Oakley Park, Blackrock, had a group comprising exotic plants, also Begonias and vegetables.

Messrs. HUGH DICKSON, Belmont, staged a group of Roses, also Dahlias, which took the Society's Silver Medals in both classes for nurserymen.

The Hon. A. H. F. DE MONTMORENCY had a nice stand of zonal Pelargoniums.

J. F. LOMBARD, Esq., South Hill, Rathmines, staged some fine *Gladioli*.

BATTLE FLOWER SHOW.

AUGUST 19.—The weather, which had been more like October than August, was on this occasion favourable to a successful flower show, and a collection of plants, cut flowers, and fruit, was shown in the lovely grounds of the venerable Abbey, that reflected great credit on the gardeners and amateurs of the district.

Nor must any exception by made in the cottagers' class, for under the stimulus of special awards offered by the Duchess of Cleveland, Lady Idina Brassey, the Royal Horticultural Society, and the local Society, cottagers and allotment-holders staged a very fine and clean lot of vegetables; Potatoes and Onions being of superior quality; while the plants and cut flowers showed unmistakable signs of careful and intelligent culture, Asters and Stocks, always favourites in this class, being very noticeable.

The exhibits in the second division, from which gardeners and the profession generally are excluded, was on the whole hardly up to its usual standard. Even the fruit was deficient, both in quantity and quality, many well-remembered names being absent. Plums were not above mediocrity in any class but Morello Cherries were fully up to precedent.

For a collection of eight dishes of fruit, the 1st prize went to Mr. GORE, market-grower, Polegate; who beat Mr. GRICE, gardener, Ashburnham Place, by only a few points. Is it quite fair for these wholesale growers to compete with gentlemen's gardeners?

There were nine competitors in a class for six Figs, a dish of very fine Brunswick, shown by Mr. T. PORTNELL, being best. Melons were not first-class, and the show of Grapes was poor for Battle.

In the Muscat of Alexandria class Mr. CAMM was 1st, but had it been a week later this honour would most certainly have gone to Mr. W. ALLEN, of Normanhurst, whose bunches were more symmetrical, though the berries wanted a little more finish.

Peaches and Nectarines were a fine and even lot, and required careful judging. Nearly all of them were from the open wall, Dymond being to the front, a perfect dish of six securing the 1st prize.

There are many special prizes given by the landowners of the district as well as the Society which invited good competition; for instance, that for four flowering, and four fine foliage plants, and a similar one for gardeners and amateurs only, which, combined with the prizes for exotic and British Ferns, served to well fill the first division tent. *Vallota purpurea* major, *V. eximia*, of W. Bull, by its extreme brightness compelling attention; it is a desirable variety, with a

dwarf habit, and large, rosy-scarlet flowers with pure white centres, altogether an advance on *V. purpurea*; and Gilbert's variety of *Statice profusa* formed conspicuous specimens in all the collections staged.

Groups were very good, the 1st prize falling to Mr. GRICE, gr. to the Earl of ASHBURNHAM.

Table decorations were good, but quite a replica of Hastings.

BATH FLORAL FÊTE.

AUGUST 29, 30.—This Society held its autumn show on the above dates under much more favourable weather than is customary. The Sydney Gardens is an ideal spot for the holding of such an exhibition, the wealth of tree growth giving the desired amount of shade and coolness for the benefit of the many hundreds who patronise the show when the weather is summer-like.

The great tent devoted to trained flowering stove and greenhouse plants, Fuchsias, &c., presented a magnificent spectacle, and was better filled than we have seen it for some years, and the quality of the exhibits was excellent.

Specimen Plants.—The principal class was that for eighteen specimens, six to be flowering, the remainder foliage plants. Mr. CYPHER, of Cheltenham, was an easy 1st, staging grand specimens of *Kentias* *Belmoreana* and *Posteriana*, *Phoenix rupicola*, *Codiaeums* *Countess*, *Queen Victoria*, *Chelsonii*, *angustifolia*; *Ixoras*, *Ericas*, *Allamanda nobilis*, and *Bougainvillea glabra*. Messrs. WOOD & SON, Chipping Solbury, 2nd, with smaller plants. *Bougainvillea Sanderii*, *Stephanotis*, and *Tabernaemontana coronaria* being the more noteworthy; Messrs. COLE & SON, Bath, were 3rd.

Mr. CYPHER staged six grand plants in the class for that number, and was again an easy 1st. The plants were *Ixora Duffii*, *Allamanda nobilis*, *Phenocoma prolifera* *Barnesii*, *Bougainvillea glabra*, *Rondeletia speciosa* major, and a *Heath*; Mr. G. TUCKER, Hilperton, Trowbridge, was 2nd, with smaller, but still, beautifully fresh and freely-flowered specimens—*Statice* *Gilbertii*, *Dipladenia Brearleyana*, and a *Stephanotis floribunda* were his best plants.

For a single specimen stove plant, Mr. CYPHER showed a magnificent *Ixora Duffii*; Mr. TUCKER following with a freely-bloomed *Dipladenia amabilis*.

Mr. CYPHER staged a fine *Statice intermedia* in the class for a single specimen greenhouse plant; Mr. TUCKER having a *Lapageria alba*, taking the 2nd prize.

Messrs. COLE & SON were 1st for eight specimen foliage plants, Palms preponderating in the collection.

Mr. CYPHER, with a fine *Codiaeum Chelsonii*, took 1st prize for a specimen stove plant.

Fuchsias, which are a feature at these shows, were quite up to the average quality, Mr. G. TUCKER once more demonstrating his skill as a grower and trainer of these summer plants by taking the 1st prize for nine specimens; P. HUTCH, Esq., Bradford, was 2nd; and Mr. J. LYE 3rd.

E. T. D. FOXCROFT, Esq., Bath, was 1st for six varieties; Lady PITMAN, Bath, 2nd; and Mr. W. A. BARFORD 3rd.

Mr. TUCKER was 1st with a single specimen, dark, as also for a light flowered variety; Mr. FOXCROFT was 2nd in both classes.

Mr. CYPHER was the only exhibitor of six Orchids, and was also 1st for a specimen *Erica*, and of one new or rare plant.

Groups.—These devices, instead of occupying their accustomed position in the centre of the tents, were crowded into the upper end, which spoiled the effect, when the splendour of former shows is remembered. There is, however, a reduction of space, and of money value offered in prizes, which was a distinct disadvantage to the exhibition. In his 1st prize group, Mr. CYPHER displayed great taste in arrangement, and the quality of the flowers employed was good. Orchids, including *Dendrobis*, *Cattleyas*, *Oncidiums*, and *Odoctoglossums*, in variety, were freely made use of. *Humea elegans*, *Codiaeums*, *Bamboos*, and *Liliums*, with a groundwork of dwarf foliage and moss, made an attractive exhibit; Messrs. COLE & SON, Bath, were 2nd, with a less artistic display; Major DOHERTY (gr., H. Plance), arranged a bright and effective group, and was awarded 3rd prize.

Ferns, Begonias, double and single; *Coleus*, *Liliums*, *Cockscombs*, *Gloxinias*, zonal *Pelargoniums*, and *Petunias*, each have classes provided, and in which there is a healthy competition, and together they make up an interesting and varied exhibition.

CUT FLOWERS

filled the whole of the sides of the large tent; and as with the plants, so with these, there were numerous entries. Of Show Dahlias, in twenty-four varieties, there were three entries, all good. Mr. W. TRESEDER, Cardiff, showed the best, his varieties being: Dr. Keynes, Joseph Ashby, Mrs. W. Slack, Duchess of York, Mrs. Foreman, Rev. J. Gooday, Mr. Glasscock, Southern Queen, Virginala, Willie Garrett, Maud Fellowes, Mrs. Langtry, Henrietta, J. T. Saltmarsh, Hon. Mrs. Wyndham, Prince Bismarck, Mrs. Gladstone, Diadem, J. Walker, Victor, F. Tranter, Dante, Mrs. Giffard, and Wm. Rawlings; Mr. J. WALKER, Thame, was 2nd; and Mr. G. HUMPHRIES, Chippenham, 3rd. In the class for twelve varieties, Messrs. CRAY & SONS, Frome, were 1st. For nine fancy varieties, Mr. HUMPHRIES was 1st, Mr. TRESEDER 2nd, and J. WALKER 3rd. The competition in the class for twelve bunches of Cactus Dahlias in six varieties made a large and attractive show, and must have given the judges some difficulty in deciding. Messrs. CRAY & SONS were 1st, their stand including Starfish, Britannia, G. Sherbrook, Primrose Dame, and Standard Bearer; Mr. TRESEDER was again 2nd, and Mr. WALKER 3rd. Singles and Pompons made, too, a pretty show. Mr. T. CARR

Tiverton-on-Avon, and Messrs. CRAY & SONS, won the premier prizes.

Gladioli were staged in quantity, and the quality generally was superb. Mr. J. MATTOCK, Oxford, was 1st, with thirty-six spikes in eighteen varieties; and Mr. G. HUMPHRIES, with twelve spikes.

Roses were very good, and the competition fairly keen. Messrs. PERKINS & SONS, Coventry, took 1st prize for twenty-four blooms, staging Sir Rowland Hill, Duke of Edinburgh, Alfred Colomb, Horace Vernet, Lady Londonderry, and Meade, in good form. Mr. J. MATTOCK was 2nd, with flowers scarcely so large as the winner's; and Messrs. GARAWAY, Bath, were 3rd. Mr. W. T. MATTOCK, Oxford, won the 1st prize in the class for twelve blooms, his best bring Duchess of Bedford, Niphotos, and Lady Mary Fitzwilliam; Mr. A. A. WALTERS, Bath, took 2nd prize with a nice clean lot of blooms.

For Twelve Teas, Mr. W. T. MATTOCK scored again, *Perle des Jardins*, *Madame Lambard*, *Maman Cochet*, and *Marie Van Houtte* being his best; Mr. J. MATTOCK was 2nd. The latter was a good 1st in the class for twelve varieties, five trusses of each, staging brightly-coloured hybrids and Teas. Messrs. COOLING & SONS and G. GARAWAY following with Teas in variety.

Annals, Herbaceous Flowers in bunches, *Asters*, *Zinnias*, *Sweet Peas*, &c.—These were exceptionally good, the *Asters* in particular. Bouquets, Vases of Flowers, and other devices were as usual both numerous and good. Table decorations were represented by eight competitors, Lady THEODORE GUEST (gr., Mr. T. Wilkins), taking first honours.

FRUIT.

These classes were well filled in almost every case, no less than seven competing in the class for eight dishes. J. N. FLEMING, Esq. (gr., W. Mitchell), Romsey, took the 1st place, he having *Madresfield Court* and *Gros Maroc* Grapes; Sutton's A 1 Melon, *Negro Largo* Figs, *Sea Eagle* Peaches, *Pitmaston Orange* Nectarines, *Pond's Seedling* Plums, and *Morello Cherries*. Lady ASHBURTON (gr., Mr. Hall), was 2nd, showing among his dishes fine *Brunswick* Figs, *Muscat Grapes*, and *Pine-apple Nectarines*. Lady THEODORE GUEST was 3rd, only one bunch of *Muscat Grapes*, and two of *Gros Maroc* were staged in this exhibit.

There were several entries for eight bunches of Grapes in four varieties, and Mr. MITCHELL was 1st; showing very fine clusters of *Black Hamburg*, *Gros Maroc*, *Madresfield Court*, and *Muscat of Alexandria*. Mr. MARSH, Bath, was 2nd; and Mr. T. JONES, 3rd.

Mr. G. SUTTON, Bristol, was 1st with five bunches of *Buckland Sweetwater*, in the class for any other white variety, and the BROMHAM FRUIT CO. took the 1st prize for Muscats. There were other classes for Grapes, and in every instance the quality was good, and the competition keen.

Apples, Pears, Plums, Cherries, Nuts, Melons, Figs, and Tomatos are each severally provided for, and in these quite a large entry was made, and the quality throughout was excellent in every respect. Apples, particularly the culinary varieties, were very fine and numerous.

Vegetables, as usual, were displayed in the open air on the slope closely abutting on the railway, and, as is customary at Bath, the competition was keen, and the produce very finely selected. Cauliflowers, Carrots, and Tomatos were especially fine.

There were several non-competitive exhibits; lovely Phloxes and Pentstemons were contributed by Messrs. HOUSE & SON, Westbury-on-Trym; Messrs. COOLING & SONS showed garden Roses and single flowered Dahlias; Messrs. WALTERS, Bath, herbaceous flowers and Roses; Messrs. WEBB, of Stourbridge, a collection of annuals; the DEVON NURSERY CO., Teignmouth, contributed Sweet Peas, Dahlias, and other flowers; Alderman CHAFFIN staged some handsome *Madresfield Court* and *Cann Hall Muscat Grapes* from his extensive vineries at Bath.

The secretaries, Messrs. PEARSON and JEFFERY have every reason to be gratified with the extent and quality of the show, and much credit is due to them from exhibitors and public, every detail connected therewith being carried out in the best possible manner. Fine weather favoured the show, and it is hoped the financial results are satisfactory.

WELLINGBOROUGH AND MIDLAND COUNTIES DAHLIA.

AUGUST 30.—Instead of holding their annual exhibition in the cold and bare Corn Exchange as heretofore, the Society arranged for their flowers to be staged under a spacious tent in a paddock adjoining the residence of their President, Mr. THOMAS PENDERED, at Redwell, Wellingborough. There was an excellent show of Dahlias, with the addition of fruits and vegetables. Several Dahlia-growers from the south exhibited, and it was the best display the Society has yet held. Many of the working men of Wellingborough and district grow Dahlias for exhibition.

The principal class of those open to all comers, was one for thirty-six blooms of show and fancy varieties; and the first prize was awarded to Mr. JOHN WALKER, Nurseryman, Thame, who had refined flowers of Mrs. W. Slack, James Cocker, Gaety, Chieftain, Rev. J. B. Camm, Muriel Hobbs, Shottesham Hero, John Wyatt, Maud Fellowes, Mr. Glasscock, Mrs. Eversy, Buffalo Bill, &c.; Mr. S. MORTIMER, Swiss Nursery, Farnham, was 2nd, also with very good blooms.

With twenty-four blooms, Mr. J. WALKER was again 1st; his principal flowers were John Walker, Mr. Glasscock, Duke of Fife, John Standish, David Johnson, Rev. J. B. Camm

Arthur Rawlings, Kathleen, &c.; Mr. Geo. HUMPHRIES was 2nd with blooms of good quality.

So strong was Mr. WALKER that he was also placed 1st with twelve blooms, showing in fine character in this class such varieties as John Walker, Mrs. Gladstone, Seraph, Maud Fellows, Victor, John Hickling, Duke of Fife, Florence Tranter, &c.; Mr. G. HUMPHRIES was again 2nd.

There were two classes for Cactus Dahlias shown on boards. The best eighteen blooms came from Mr. S. MORTIMER, who had excellent blooms, chief among them Mrs. Carter Page, The Clown, Lucius, Mrs. J. J. Crowe, Exhibition, Charles Woodbridge, Keyne's White, Ebony, Startish, &c.; Mr. J. WALKER was a close 2nd; he had, differing from the foregoing, J. F. Hudson, Debonair, Countess of Lonsdale, Britannia, and Sylph.

Mr. J. WALKER was 1st with twelve blooms, and he staged in excellent character, Britannia, Zephyr, Lucius, J. F. Hudson, The Clown, Mary Service, Night, Stella, and Magnificent; Mr. S. MORTIMER was 2nd.

For twelve bunches of Cactus varieties, three blooms in a bunch, Mr. S. MORTIMER was 1st with a very fine lot, having Monarch (new), Britannia, Purity, white (new); Mrs. Carter Page, Prince of Yellows (new), Lucius, Mrs. J. J. Crowe, Mrs. J. Goddard, Exquisite, Zephyr, and Major Tuppeny; Mr. J. WALKER took the 2nd prize, having distinct from the foregoing, Stella, Ruby, and J. F. Hudson.

Mr. WALKER was the only exhibitor of twelve bunches of Pompon Dahlias, putting up model flowers of the following varieties:—Cheerfulness, Opal, Adrienne, Sunny Daybreak, Bacchus, Ganymede, Douglas, Emily Hopper, Tommy Keith, and Rosalie; and he took the 1st prize for an elaborate vase of Dahlias, which was much admired.

Special prizes were offered for the best three blooms of a yellow Dahlia. Mr. MORTIMER came 1st, with R. T. Rawlings, and Mr. J. WALKER was 2nd, with John Hickling.

A special prize for the best new Cactus Dahlia in the show which has never before been exhibited, was awarded to Village Maid, a light green variety, tipped with ruby, from Mr. J. GREEN (Hobbies & Co.), Dereham.

There were several classes for Dahlias shown by amateurs, but open to all comers, and here the local growers came to the fore with excellent blooms. Mr. A. ROBINSON, Wellingborough, had the best twelve, and Mr. T. PENDERED came 2nd.

The best twelve blooms of Cactus—a very good lot—came from Mr. H. BINDLY, Desborough. Mr. J. YORK had the best six blooms. Cactus varieties were also shown in bunches. There were also special prizes for amateurs, for show and Cactus Dahlias, and in each case very good blooms were staged. Dahlias were also well shown by cottagers.

Certificates of Merit were awarded to two new Cactus Dahlias, viz., Minnie Walker, delicate primrose suffused with white, a very refined flower, from Mr. S. MORTIMER; and to Baden Powell, bright red tipped and suffused with maroon, and of the finest Cactus type, from Mr. JOHN GREEN, Dereham.

Messrs. DOBBIE & Co., Orpington and Rothesay, had a large and interesting collection of Dahlias; and Mr. JOHN GREEN, Dereham, the same.

STIRLING HORTICULTURAL.

AUGUST 23.—This Society, which is one of the oldest in Scotland, held its annual exhibition on the above date. The entries were more numerous than usual, but when they came to be staged, there was a shrinkage in the vegetable section. The show, however, was a good one, and quite up to the average which we are accustomed to see at Stirling, where the enthusiasm both of exhibitors and the public is great. Horticulture is very strongly represented at the "City of the Rock," and much first-class gardening is to be seen throughout the district.

Mr. LUNT, gr. at Keir, was, as usual, well to the front, with fruits from under glass, carrying off all the leading Grape prizes, his exhibits being excellent in every respect. Mr. LUNT's plants were on a par with his fruits, foliage plants especially being of much merit. All the leading prizes for plants were also won by Mr. LUNT.

Mr. RITCHIE, of Polmaise Gardens, as usual, took the leading prizes for hardy fruits.

Mr. CRAIG and Messrs. DRUMMOND, nurserymen, representing the trade, were strong in table and other plants.

Mr. HODGSON, florist, exhibited a collection of Peaches and Plums which were much admired.

GARDENING APPOINTMENTS.

Mr. E. WRIGHT, for the past thirteen years Gardener at Park House, Cottingham, as Gardener to H. E. GODDARD, Esq., Thwaite House, Cottingham.

Mr. R. BARTON, for the past eight years Foreman at The Hendre Gardens, Monmouth, as Gardener to Sir CHAS. CAVE, Bart., Sidbury Manor, Sidmouth, Devon.

Mr. S. G. BRYNT, for over four years Head Gardener at Barra Hall, Hayes, Middlesex, as Head Gardener to Major W. BURGESS, Fernside, Child's Hill, N.W.

Mr. E. NORTON, for the last three years as Foreman at the Gardens, Iwerne Minster, Blandford, as Head Gardener to Baron DIMSDALE, Essendon Place, Hatfield.

Mr. GEORGE WILLIAMS has been appointed, through Mr. WILLIAM BULL, of King's Road, Chelsea, as Head Gardener to the Rt. Hon. LOUISA, Lady ASHBURTON, at Addiscombe Park, Croydon.

Mr. Wm. COUSINS, as Head Gardener to C. E. ATKINSON, Esq., Alga Lodge, Beckenham.

CATALOGUES RECEIVED.

BULBS, &C.

JAS. COCKER & SONS, 130, Union Street, Aberdeen.

DICKSONS, Chester.

JAS. CARTER & CO., 237, High Holborn, London, W.C.

W. FROMOW & SONS, Sutton Court Nurseries, Chiswick.

FISHER, SON & SIBBAY, Ltd., Royal Nurseries, Handsworth, Sheffield.

DICKSON & ROBINSON, Manchester.

FRED SMITH & Co., Woodbridge, Suffolk.

LEONARD BROWN, Brentwood, Essex.

BRUCE AND ROBBIE, 42, Castle Street, Forfar, N.B.

POPE & SONS, Central Avenue, Market Hall, Birmingham.

W. SMITH & SON, Exchange Seed Warehouse, Aberdeen.

EDMONSON BROS., 10, Dame Street, Dublin.

ANT, ROOZEN & SON, Overveen, Haarlem, Holland.

"SAMSONS," 8 and 10, Portland Street, Kilmarnock.

MAURICE PRITCHARD, Christchurch, Hants.

ROBERT PRINGLE, 40, Belvoir Street, Leicester.

CLARK BROS. & Co., 65, Scotch Street, Carlisle.

W. DRUMMOND & SONS, Ltd., Stirling, N.B.

OAKENHEAD & Co., 85, Patrick Street, Cork.

JOHN K. KING, Coggeshall, Essex, and Reading, Berkshire.

BARR & SONS, 11, 12, and 13, King Street, Covent Garden, London, W.C.

DICKSONS & Co., 1, Waterloo Place, Edinburgh.

MISCELLANEOUS.

DICKSONS, Chester—Select Roses; Select Strawberries.

ALBERT CHATWIN, 35, Wheelers Road, Edgbaston, Birmingham, Carnations.

W. A. BROTHERTON, Rochester, Michigan, U.S.A.—Michigan Wild Flowers, Tubers, Bulbs, &c. Special Wholesale.

LOUIS FAILLER, Valle de Chateaux, Chateaux, Paris, Peonies, Roses, Plants for Forcing, and Fruit-trees.

W. CUTBUSH & SON, Highgate and Barnet Nurseries, Herts, Carnations.

VILMORIN, ANDRIEUX ET CIE., 4, Quai de la Megisserie, Paris, Bulbous Plants, Strawberries, Hardy Flowers, &c.

M. PRITCHARD, Riverslea Nursery, Christchurch, Hants, Alpine and Herbaceous Plants.

ALFRED WOODROFFE, Northcote Nursery, Auckland, N.Z.

M. CUTBERTSON, Rothesay, N.B.—Herbaceous Plants, Pansies, Roses, Bulbs, &c.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period August 26 to September 1, 1900. Height above sea-level 24 feet.

1900.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.				
		AT 9 A.M.		DAY.	NIGHT.	RAINFALL.	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.	
		Dry Bulb.	Wet Bulb.							
		Highest.	Lowest.	LOWEST TEMPERATURE ON GRASS.						
AUGUST 26 TO SEPTEMBER 1.		deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	
SUN. 26	N.E.	59.2	50.4	62.5	52.5	...	61.8	62.0	60.1	46.0
MON. 27	E.N.E.	60.6	55.9	63.3	53.5	0.02	50.5	61.5	60.0	48.2
TUES. 28	E.N.E.	57.9	55.0	61.4	56.0	...	59.5	60.9	59.9	52.7
WED. 29	E.N.E.	61.7	58.0	69.2	56.2	...	59.5	60.4	59.7	54.2
THU. 30	E.S.E.	60.5	55.7	63.4	55.2	...	60.8	60.5	59.5	49.2
FRI. 31	S.S.W.	55.3	55.5	74.2	44.9	0.0	58.9	60.6	6.59	53.9
SAT. 1	S.S.E.	61.1	60.7	66.7	54.9	0.09	51.7	60.8	59.3	47.6
MEANS...	...	59.6	56.1	66.3	53.3	0.39	60.5	61.0	59.7	48.2

Remarks.—The past week has been remarkable for misty mornings and dull, cold days.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending September 1, is furnished from the Meteorological Office:—

"The weather was mostly fair and dry during the greater part of the week, but towards its close it became unsettled and rainy, at first in the north and west, and subsequently over the whole kingdom.

"The temperature was just equal to, or rather below the mean generally, but was 2° above it in the Channel Islands. The highest of the maxima occurred on the 31st, and ranged from 76° in England, E., and 75° in England, S., to 68° in

Scotland, N., and Ireland, N. The lowest of the minima were recorded on rather irregular dates, but generally between the 26th and 29th in the west and north, and on the 31st in the south. They ranged from 36° in Scotland, E., 37° in Ireland, N., and 38° in Scotland, N., and Ireland, S., to 48° in England, S., and to 55° in the Channel Islands.

"The rainfall exceeded the mean in Scotland, N., and just equalled it in Scotland, W., but in all other districts there was a deficit.

"The bright sunshine was deficient over the country generally, but exceeded the normal in Scotland, N., and England, N.W. The percentage of the possible duration ranged from 42 in the Channel Islands, and 33 in England, N.W., to 26 in Ireland, N., 25 in the Midland Counties, and 17 in England, N.E."

MARKETS.

COVENT GARDEN, SEPTEMBER 6.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day but often several times in one day. Ed.]

CUT FLOWERS, &C.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asparagus "Fern," bunch ...	2 0 2 6	Maidenhair Fern, per doz. bunches	4 0 8 0
Carnations, per doz. blooms ...	1 0 2 0	Marguerites, p. doz. bunches ...	2 0 4 0
Cattleyas, per dozen	9 0 12 0	Mignonette, dozen bunches ...	4 0 6 0
Eucharis, per dozen	2 0 4 0	Montbretia, bunch 0 6 —	
Gardenias, per doz. spikes ...	1 6 —	Odontoglossums, per dozen ...	4 0 8 0
Gladiolus, scarlet, per dozen ...	2 6 5 0	Roses, Red, per doz. — Tea, white, per dozen ...	1 0 3 0
— white, per doz.	2 6 4 0	— Safrano, per dozen ...	1 0 3 0
Lilium Harrisii, per dozen blooms ...	4 0 5 0	— Catherine Mermet, per dozen	2 0 5 0
Lilium lancifolium album, doz. blms.	1 0 3 0	Smilax, per bunch	4 0 5 0
Lilium rubrum, doz.	3 0 5 0	Tuberose, per doz. blooms ...	0 4 6 0
Lilium longiflorum, per dozen ...	4 0 5 0		
Lily of Valley, per doz. bunches ...	12 0 24 0		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	5 0 7 0	Ferns, small, per 100 ...	4 0 6 0
Arbor-vitae, var. doz.	6 0 36 0	Ficus elastica, each	1 6 7 6
Aspidistras, p. doz.	18 0 36 0	Foliage plants, var., each ...	1 0 5 0
— specimen, each	5 0 10 6	Lily of Valley, each	1 9 3 0
Cannas, per dozen	18 0 —	Lycopodiums, doz.	8 0 4 0
Crotons, per doz.	18 0 30 0	Marguerites, per dozen ...	8 0 12 0
Cyclamen, per doz.	8 0 10 0	Myrtles, per dozen	6 0 9 0
Dracenas, var., per dozen ...	12 0 30 0	Palms, various, ea.	1 0 15 0
— viridis, per doz.	9 0 18 0	— specimens, each	21 0 63 0
Ericas, var., per doz.	12 0 36 0	Pelargoniums, scarlet, per dozen	8 0 12 0
Eucynymus, various, per dozen ...	6 0 18 0	— Ivyleaf, per doz.	8 0 10 0
Evergreens, var., per dozen ...	4 0 18 0	Spiraeas, per dozen...	6 0 12 0
Ferns, in variety, per dozen ...	4 0 18 0		

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aubergines, per dz.	2 6 —	Mint, new, p. doz. bunches ...	1 6 —
Artichokes, Globe, per doz.	3 0 —	Mushrooms, house, per lb. ...	0 8 —
Beans, Scarlet Runners, bush.	1 6 2 0	Onions, picklers per sieve ...	3 0 —
— English, dwarf, per bushel ...	2 0 3 0	— per bag ...	3 6 —
— per sieve ...	1 6 —	— Green, dozen ...	1 6 2 0
Beetroots, bushell.	1 6 —	— cases ...	5 0 6 0
Beet, per dozen	0 6 —	— English, bag ...	5 0 —
Cabbage, tally ...	1 6 2 0	Parsley, 12 bunches per sieve ...	0 9 1 0
— dozen ...	0 6 —	Peas, per bushel ...	3 0 4 0
Carrots, new, per dozen ...	0 9 2 0	Potatoes, per ton	65 0 90 0
— washed, in cwt. bags ...	3 0 —	Radishes, 12 bches.	0 9 1 0
Cauliflowers, per dz.	1 6 2 6	Said, small, punnets, per dozen	1 3 —
Cress, per dozen punnets ...	1 8 —	Shallots, new, r. lb.	0 2 —
Cucumbers, doz.	1 0 1 8	Spinach, per sieve ...	1 0 —
Endive, new French, per dozen ...	1 6 —	— bush 1 ...	1 6 2 0
Garlic, new, lb.	0 7 —	Tomatoes, English, new, per 12 lb.	2 0 3 0
Horseradish, English, bundle ...	1 6 —	— Channel Islands, per lb. ...	0 2 0 3
— foreign, per bundle ...	1 0 —	— French, crate, 3 6 —	
Leeks, per dozen bunches ...	1 6 —	Turnips, new, per dozen ...	1 6 2 0
Lettuce, English Cabbage, bush.	1 6 —	— in bags ...	2 6 3 0
— English Cos, per score ...	1 0 1 6	Vegetable-Marrows, per dozen ...	0 6 1 0
		— tally ...	1 0 1 6
		Watercress, p. doz. bunches ...	0 4 0 6

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, English, per bushel—		Melons, each ...	0 0-1 3
Suffields ...	1 6-2 6	— Foreign Rocks.	1 6 —
Kewicks ...	1 0-2 0	Melons, Valencia, cases (24 to 36)	4 0 —
Julians ...	1 6-2 6	Nectarines, per doz.	
Overreends ...	3 0-4 0	Class A ...	5 0-8 0
Various ...	1 0-2 0	Class B ...	2 0-4 0
Apricots, per dozen	1 6-2 0	Oranges, Naples, p. case	10 0 —
Bananas, bunch ..	6 0-11 0	Peaches, per doz.—	
Cobnuts, lb. ...	0 3½-0 4	Class A ...	4 0-8 0
Figs (New), per dozen	0 9-1 6	Class B ...	1 6-2 6
Filberts, per lb. ...	0 4½ —	Pears, Californian, cases ...	4 0 —
Grapes, Hamburgh, new, per lb. ...	0 6-1 3	— Wms., Eng., si. 1 6 —	
— Alicante ...	0 9-1 6	— Williams, French in boxes (48) ...	2 0-3 0
— Colmar ...	1 0-2 0	— in crates, acc.—	
— Gros Maroc, lb. ...	1 0-1 9	— cording to count	7 6 —
— Muscats, A., per lb. ...	2 0-3 0	Pines, each ...	2 0-5 0
— Muscats, B., per lb. ...	1 0-1 6	Plums in sieve ...	1 0 —
— Belgian, per lb. ...	0 7-1 0	— English, various per sieve ...	0 9-1 3
— Denia, in barrels	4 0 —	Green Gages in sieves ...	2 0-2 6
Lemons, case ...	12 0-18 0		

REMARKS.—A quantity of home-grown Plums sold as low as 4½d. per sieve on Saturday last. Apples continue low in price. The first Blackberries were on the market a few days ago; and there are some Californian Plums. The supply generally is plentiful, and trade is slow.

POTATOS.

Potatoes: Various and Kents, 65s. to 90s. per ton. *John Bath, 32 & 34, Wellington Street, Covent Garden.*

FRUIT AND VEGETABLES.

GLASGOW: September 5.—The following are the averages of the prices recorded since our last report:—Bananas, extras, 11s. to 13s. per bunch; No. 1, 9s. to 10s. do.; No. 2, 7s. 6d. to 9s. do.; Grapes, English, new, 1s. to 2s. per lb.; foreign, Denia, 1s. to 2s. 6d. per barrel; do., 3s. 6d. to 6s. 6d. per case; black, 3s. to 6s. per barrel; Almeida, legitimates, 11s. to 14s. per barrel; tinted, sound, 5s. to 8s. do.; wasty, 1s. to 3s. do.; Lemons, Palermo, cases, 300's, 20s. to 24s.; 360's, 12s. 6d. to 20s. do.; Naples, cases, 20s. to 30s.; Melons, Valencia, 24's, 4s. to 4s. 6d. per case; do., 30's, 5s. to 6s. 6d. do.; Onions, Valencia, 4's, 4s. to 5s. per case; do., 5's, 5s. 6d. to 6s. 6d. do.; Mushrooms, 1s. per lb.; Apples arriving to special order.

LIVERPOOL: September 5.—*Wholesale Vegetable Market.*—Potatoes, per cwt.: Early Regents, 2s. 10d. to 3s. 3d.; Bruces, 3s. to 3s. 3d.; Kidneys, 4s. to 4s. 9d.; Lynn Grey, 2s. 9d. to 3s. 3d.; Main Crops, 4s. 9d.; Turnips, 6d. to 8d. per 12 bunches; Swedes, 1s. 6d. to 2s. per cwt.; Carrots, 6d. to 8d. per 12 bunches; Onions, foreign, 4s. to 5s. per cwt.; Parsley, 4d. to 6d. per dozen bunches; Lettuce, 8d. to 10d. per dozen; Cucumbers, 1s. to 2s. 6d. do.; Cauliflowers, 10d. to 1s. 9d. do.; Cabbages, 4d. to 8d. do.; Celery, 1s. to 2s. do. *St. John's*: Potatoes, 1s. 2d. per peck; Grapes, English, 1s. 6d. to 2s. per lb.; Pines, English, 6s. each; Apples, 2d. to 4d. per lb.; Pears, 2d. to 4d. do.; Tomatoes, 6d. do.; Damsons, 3d. do.; Peas, 1s. 6d. per peck; Cucumbers, 4d. each; Mushrooms, 1s. per lb. *Birkenhead*: Potatoes, 16d. to 1s. per peck; Cucumbers, 2d. to 4d. each; Damsons, 2d. to 3d. per lb.; Grapes, English, 1s. 6d. to 3s. 6d. per lb.; do., foreign, 4d. to 8d. do.; Mushrooms, 6d. to 10d. do.; Peaches, 2d. to 4d. each.

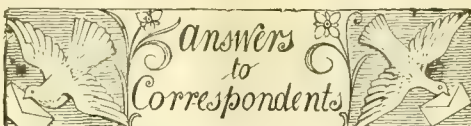
SEEDS.

LONDON: September 5.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report an average attendance on to-day's seed market. There is a good inquiry for Red Clover-seed at advancing rates. Trefoil is very scarce and dear. No change is shown in either White or Alsike. As regards Trifolium, supply and demand are both alike moderate. Samples of new Mustard and Rape-seed realise former terms. Winter Tares, with limited offerings, favour sellers, whilst seed Rye is harder. The market for Bird-seeds is very firm. Blue Peas and Haricot Beans keep exceedingly steady.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending September 1, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.	1900.	Difference.
	s. d.	s. d.	s. d.
Wheat	25 0	28 8	+ 3 8
Barley	25 10	25 2	- 0 8
Oats	16 7	18 1	+ 1 6



CARNATION PLANTS WITH LARVÆ: *R. P., Lost-withiel.* Your Carnations are infested with the larvæ of a Dipterous fly (*Anthomyia* sp.), resembling very closely the species which attacks the Onion. It is a very destructive insect, but fortunately is very local in its distribution. Go over the plants carefully, and remove all attacked shoots with grubs, and transplant to fresh ground.

CARNATIONS DYING OFF FROM THE ROOT UPWARDS: *C. A. B.* The death of the plants is due to eelworms—microscopic creatures that infest soils, especially the pasture loams favoured by gardeners. There is no known cure that will not also kill the plants. The loam should not be used fresh from the field, but be placed in a stack for a year or longer, and be kept free from all kinds of herbage, or if used in small quantities it may be baked or scalded so that all insect life in it is destroyed.

CHRYSAANTHEMUM RUST: *T. B., Esher.* The maggot has disappeared from the leaf; but whatever they may be, they have nothing to do with causing the fungus, though they may help to disseminate it.

CORRECTION.—LECTURE ON MONTBRETIAS AND CROCOSMIAS: In our report of M. Lemoine's paper on p. 177, an error was made in attributing to M. Crozy the raising of Montbretia crocosmæiflora, which we are now told was raised by the late M. Victor Lemoine. *Tritonia aurea* was not originally known as a Kniphofia, but there are cases where true Kniphofias have at one time been described as Tritonias. *K. sarmentosa* for instance.

DOUBLE-FLOWERED MAYWEED: *R. F. S.* The double form of *Matricaria inodora* is interesting, but not particularly rare.

FUNGUS: *D. W. W.* Dried up; send better specimens packed in damp moss.

GARDENER'S NOTICE TO QUIT: *T. T.* This question was answered in a recent issue of the *Gardeners' Chronicle*.

"HERBACEOUS PERENNIALS": *X. Y. Z.* Unless the schedule says that flowers of Lilies and other bulbous plants may not be shown, the exhibitor was certainly within his right in showing them amongst herbaceous perennials.

HICKORY PINE FROM CALIFORNIA: *C. W. S.* We believe this to be synonymous with *Pinus Balfouriana*, called in Nevada the "Fox Tail Pine."

NAMES OF FRUITS: *J. H.* Your Pears were quite smashed in post.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*Seeds.* *Angelonia Gardnerii*, Hooker.—*T. S. N. P.* *Loasa aurantiaca*.—*Subscriber, Ireland.* 1, *Asplenium adiantum virginia*; 2, *Scolopendrium vulgare*; 3, *Polypodium vulgare*.—*E. Parslow.* 1, *Cupressus Lawsoniana*; 2, *Sequoia sempervirens* (Redwood); 3, *Thuja gigantea* (T. Lobbi of gardens); 4, *Juniperus virginiana* var.; 5, *Juniperus chinensis*.—*Flowers.* 1, *Verbascum virgatum*; 2, *Celsia cretica*; 3, *Malva moschata* alba; 4, *Bocconia cordata*; 5, *Amayllis reticulata* of gardens; 6, *Cyrtodeira fulgida*.—*E. J. J.* *Chicorium Intybus* (Chicory)—*G. H. A.* The Maidenhair Ferns are all garden-raised varieties of the *Adiantum Waltoni* class; 6, *Polystichum angulare*.—*H. B.* *Catasetum maculatum*.—*W. M.* *Crinum Moorei*. Quite hardy outdoors, if planted deep and close to a wall, or in a border against a plant-house.—*Constant Reader.* 1, *Tradescantia virginica*; 2, *Polygonum cuspidatum*; 3, *Cistus ladaniferus* (Gum Cistus); 4, *Diplopappus chrysophyllus*; 5, *Bocconia cordata*; 6, *Stachys lanata*.—*B. A. X.* We cannot undertake to name varieties of Fuchsia.—*W. Lewis.* The Orchid is *Dendrobium densiflorum*. Others next week.—*T. S. Rastrick.* We should be obliged by your sending better specimens.

NOTICE TO JOBBING GARDENER: *Employer.* Unless there is a written agreement to the contrary, the jobber may be discharged when-

ever the employer chooses, no notice being required. These men are usually engaged verbally by the hour, day, or week.

PARASITE ON CLOVER: *Quercus*, *Cuscuta Trifoli* a Dodder peculiar to Clover.

PINE-BARK PERFORATED: *W. Begbie.* The bark is filled with the breeding tunnels of *Hylurgus piniperda* (Pine beetle). Fell the trees, strip off the bark and burn it, together with all dead wood, fallen green shoots, and loose bark lying about. To do this will lessen the number of the beetles. Keep the wood clear of fallen rubbish.

PLANS OF PUBLIC AND PRIVATE PARKS: *R. Hellwig.* Several are to be found in Milner's *Landscape Gardening*, a recent work; and in Loudon's *Encyclopædia of Gardening*, and Repton's *Observations on Landscape Gardening: Observations on the Theory and Practice of Landscape Gardening*. They may give you information at the office of the London County Council, Spring Gardens; or at the British Museum.

PLUMS: *W. L.* The swellings upon the fruits are most likely due to the skin having been punctured by insects, or injured in some other way.

RATING OF LAND WITH GLASSHOUSES BUILT UPON IT: *W. Hilton.* The Lord Chancellor, together with Lords Watson, Macnaghten, and Morris, finally agreed, in the autumn of last year, with the judgment of the Master of the Rolls, with the result that market gardens under glass were in future not to be rated as agricultural land, but were to be assessed on the same scale as land on which immovable buildings are constructed.

SPLITTING OF APRICOTS: *E. S. G.* An alternately very dry state of the border and a very wet one are the usual causes of this malady. A medium moist condition the greater part of the year suits this fruit tree the best, as English nurserymen bud it on the Wilding Plum, a surface-rooting species, which is a stock that is rather susceptible to the vicissitudes of the weather. Of course, in light, shallow soils, or those overlying gravel or sand, more water is required than in heavy soils overlying a retentive stratum. Let plenty of water be applied to that part of the border that is within a yard of the wall, and do not omit to afford the border a drenching at the beginning of the winter, otherwise many of the flower-buds may drop. This holds good of all hardy fruit trees grown on walls, and more especially stone fruits.

WILLOWS FOR RIVER BANK AND DAMP PLACES, &c.: *T. M. W.* For growing into timber, plant the Huntingdon, *Salix alba*, a tree of rapid growth; The Bedford Willow, *S. Russelliana* also attains to a large size, and the bark contains more tannin than the Oak; and it is in this variety that Salicine is most abundant. The best kinds of Osiers for basket making, are *S. viminalis* and *S. triandra*. The Basford Willow is likewise a good Osier. Common Alder, Balsam Poplar, and Virginian Red Cedar, would do well on ground where the water level is 2 to 3 feet below the surface; or in the case of the Alders when it is much less. A small work on the Willow or Osier by William Sealing, was published by W. Kent & Co., Paternoster Row, London, in 1868. It was published in parts.

COMMUNICATIONS RECEIVED.—Messrs. King & Son.—*J. Ritchie*.—*B. C. R.*—*W. H.*—Young Gardener.—*J. D. A. H.*—*W. L. M. C.*—Crystal Palace Company (with thanks).—*W. B. H.*—*H. W. W.*—*A. D. W.*—*E. B. G. C.*—*F. K. J.*—*H. D. K. & Co.*—*T. Edington*.—*G. P.*, Dorking.—*T. C. C.*—*S. D. H.*—*A. T.*—*S. S. T.*—*S. C. J. P.*—*A. T. J. H. B.*—*J. B. C. D.*—*G. B.*—*Edgar*.—*J. Cairns*.—*A. L. C. A.*—*C. D.*—*Anxious One*.—*H. W. W.*—*G. N. X. Y. Z.*—*T. B.*—*Josiah R.*—*Boot & Son*.—*A. Dinwiddie*.—The Mayor of Kingston.—*C. Herrin*.—*A. K. B.*—*S. A. L. B.*, New York.—Professor George Henslow.—*W. R. F.*—*R. P. B.*—*Mrs. F. E. Lemon*.—*J. Corderoy*.—*H. D. K. & Co.*
SPECIMENS, PHOTOGRAPHS, &c., RECEIVED WITH THANKS.—*R. S. & Co.*—*W. C. & Co.*

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



VIEW IN THE GROUNDS, HIGHBURY, BIRMINGHAM, THE SEAT OF THE RT. HON. J. CHAMBERLAIN.



THE

Gardeners' Chronicle

No. 716.—SATURDAY, SEPT. 15, 1900.

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BOTANY IN RELATION TO THE GARDEN.

IT is probably assumed by most people that the gardener is, in virtue of his profession, a botanist as well. No assumption could well be more erroneous. We assume that the doctor understands chemistry, that the electrician is acquainted with optics or the laws of light, and that the chemist understands diseases. It is often a great shock to us when we discover the truth. We think that a doctor cannot rightly dispense his medicines if he has not extracted opium from the Poppy, and learned its chemical formula by direct analysis; but we might as well assume that a butcher could not cut an ox to pieces scientifically because he had not studied physiology at the university. We are apt to suppose that a gardener knows all about the plants he handles because he brings his Peas and Tomatos, his Asters and Begonias, to such perfection. And yet he may be totally ignorant in spite of it all. The butcher and the physiologist both deal with animals, the chemist and the doctor with drugs, the electrician and the optician with light, the mechanic and the miner with iron; and yet the one may be as ignorant of the other's department as if they belonged to other realms entirely. For a doctor can prescribe

perfectly for his patient, because he has learned from the lecture-room and the *Pharmacopœia* what will best suit the case in point. His business is to diagnose the disease, the rest is done for him. Yet everyone will feel that the medical man who has had a good chemical training has a decided advantage over his brother who has ignored this important branch of medical science. It may not be necessary to his equipment as a practitioner, but the wider knowledge will increase his efficiency, intensify his confidence, and win a firmer trust from his patients.

As the practice of medicine and the study of chemistry are distinct, though closely related, so is it with gardening and botany. A man may be a splendid botanist, and yet be unable to keep his flower-borders respectable. Or he may be a first-class gardener, and not know the difference between an umbel and a Composite flower. But everyone feels that if it is not necessary for the botanist to understand the art of gardening, it is of great importance that every gardener should be acquainted with the principles of botany. To whatever genus or order a plant may belong, if it is brought under cultivation, it must have air, light, moisture, food. The duty of the gardener lies primarily in discovering what amount of each is necessary. Has the plant roots, bulbs or tubers; does it possess or is it destitute of leaves; is it to be grown for the sake of its foliage, its flowers, or its fruits; has it come from the tropics or the Arctic regions; does it love shade, abundance of moisture, a northern aspect; or must it be put in the open, with flower freely and at all times to look up at the sun? These are some of the problems the gardener has to master, and in many instances the answer will be quite independent of the botanical order or genus. One member of the Primrose family may need to be treated just as if it were related to the Water-Lily or the Bog-bean. Another must

be handled as though it were allied to the Viola or Anemone. The gardener is concerned, not with names and species, orders and families, the number of stamens, or the shape of the ovary; but with the needs and capabilities of the plants under his care. He is no mere census taker, but stands to his charge as a mother does to her family. The mother knows that each of her ten children needs its own peculiar treatment. Its habits, appetites, individualities differ from those of the other nine; and the mother is successful in the upbringing of her family not in proportion as she is able to identify her own children in a crowd, but rather as she is able to anticipate and meet the needs of each of her offspring.

We may therefore state with all distinctness that a man who is entirely ignorant of botany may nevertheless become a most skilful gardener, while the expert botanist may be an utter failure at horticulture. But we are bound to say that it is a very serious mistake to divorce the two, and no gardener ought to be content to remain ignorant of botanical science. We insist on this mainly on two grounds.

In the first place, we would draw attention to the great loss which the gardener sustains from the standpoint of pleasure and delight, if he knows nothing of botany. Every educator dwells upon the value of the natural sciences. The study of nature does more than anything else to open the eye to natural beauty. The greatest beauty is not necessarily to be found in broad vistas, in sweeping downs, in landscape and seascape. It needs seeking out; and a

pocket-lens applied to the floret of a Daisy, the stamens of a bog-plant, or the colours of the Eyebright, will reveal marvels never dreamed of by those who are ignorant of Nature's by-ways. Think what delight the botanist finds in a garden, a rockery, a conservatory, or a hot-house. He sees the Periwinkle growing in the hedgerow, and takes out his magnifying glass to examine the wonderful "painter's brush," that falls into his hand as he lays the blossom open. He watches the bee or moth flitting from flower to flower, and stores his mind with wonderful facts relating to the fertilisation of plants. He peers into the blossoms of a little known plant, and finds miracles of transformation hidden in its corolla. The calyx has become petaloid, that the true petals may be set free for other duty. Stamens have been magically changed into glands and nectaries, or converted into petals; stigmata have acquired a peculiar power of development to serve some useful end, or the aborted sepals have assumed the form of a feathery pappus, which acts as a balloon to carry the seeds to distant lands.

Passing from flower to flower, the botanist notes how they change their colour with their age. Hydrangea and Candy-tuft, Viper's bugloss and Lungwort, Forget-me-not, and Virginia Stock, all have a new charm for him now that he knows the meaning of the constant variation. He applies his knowledge to the foreign Lantana and Hibiscus, and observes how wonderfully means are adapted to the securing of definite ends. The gardener who is a gardener only, walks in fairy-land with his eyes shut. Or, if he sees at all, he discovers only the gold of merchants, and misses the pearls and rubies, the emeralds and diamonds of royalty. Why not see and enjoy both? Why not have an eye to the beautiful as well as the useful? For in Nature the two go hand-in-hand.

But in the second place we plead for the training of gardeners in botany on the ground of utility. It is well to know that old bones supply the best manure for this plant, rags for that, guano for the third, and stable-manure for the rest. It is of the first moment that the gardener should learn the rules which experience has taught us respecting the times and seasons for planting and sowing, pruning and cropping, watering and netting. This is the gardener's duty. But no knowledge is final. Old rules may be improved upon, and even if they are perfect it is possible we do not know why they are so. Observation is of prime importance. By making careful note of the phenomena of plant life, the earlier gardeners, without any scientific training, acquired vast funds of knowledge; and we are the better for their observations. But how important it is that the gardener should acquaint himself with the laws which underlie all phenomena. Why do some plants set their seeds while others fail to do so. Why do some plants need to be planted near others of the same kind? What part do bees and butterflies, moths, wasps, and other insects play in the economy of plants? How is it that the Tomato has edible fruits, while the Potato, which is closely related to it, and has similar flowers, yields nauseous green berries above-ground, but edible tubers below? What makes some plants valuable as pot-herbs, others for their fruits, and others for their foliage and flowers? What are the laws of plant-life as relates to food, drink, chemical properties, duration, and development? These are a few of the questions which the botanist asks, and tries to answer; and in trying to dis-

cover the correct replies, he is learning a great deal that will be of infinite importance to him as a gardener. If a man knows nothing of the constitution of a plant, how can he understand why phosphates are better for one set than farmyard-manure? or why blood and animal refuse is the best appliance for another? A little knowledge of botany in relation to chemistry would open a new world to many a young gardener.

Much has been done of late years. In some gardens a knowledge of botany is indispensable. A young man seeking a post as under-gardener, will not be accepted unless he has acquired some familiarity with the orders of plants, the names of the organs, the uses of the parts, the laws of plant-life. But there are still many well-known gardens in which botany is an unknown subject. The head-gardener himself would find it difficult to pass an elementary examination, though he is an expert in his profession; and those who are under him are too frequently discouraged from prying into subjects which (he says) do not concern them. Having succeeded by rule-of-thumb himself, he does not care that his underlings should be scientific. The policy is bad, though it is perfectly in harmony with all we know of human nature.

Botany is now so frequently taken up by medical men, chemists, students of science, ladies, the clergy, and others, that a youth ought to find no difficulty in getting instruction. May we, however, suggest one or two ways by which the young gardener may be assisted in the pursuit. We hold that it should be imperative that every head gardener be a botanist, and hold certificates of proficiency. It would then be easy for owners of large gardens to stipulate that the duties of head gardener should include the training of the young men or women employed in the elements of the science. A certain specified time should be allotted to the subject every week, and promotion be made to depend on results. Where the head gardener or his assistant cannot undertake the duty, let a local authority on the subject be engaged wherever possible; the classes to be open, if needs be, to the outside public, so that the lecturer should be sufficiently remunerated for his labours. Finally, let a few first-class books be always at hand for the use of the students. *A Sussex Naturalist*.

(To be continued.)

ORCHID NOTES AND GLEANINGS.

VARIETIES OF ONCIDIUM FORBESI.

SIX very distinct and dissimilar forms of this showy cool-house Oncidium are sent by Messrs. Hooley, Bros., of Bitterne Park Nursery, Southampton. In one form the flowers are chrome-yellow in colour, with sparsely displayed light brown markings, while the other extreme is of a dark chocolate-brown tint, with a yellow margin to all the segments. One abnormally-developed flower has two complete labellums, but no other abnormal character, except that the lower sepals, joined at the basal third in the usual way, have three blades instead of two. From the larger to the smaller forms there seems to be a gradual approach to the plant known as *Oncidium Gardneri*.

LELIO-CATTLEYA × AURORA.

A number of plants of this pretty hybrid of *Cattleya Loddigesii* and *Lælia Dayana* have been flowering for some time in the collection of Fred Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr., Mr. Thomas Stafford), whence a flower of an exceptionally fine form of it is sent. The sepals and petals are of a bright purplish-rose colour, the tube of the lip

being of a lighter shade of rose. The disc of the lip is of a bright chrome-yellow tint, a dark red band and veining runs from the base up the centre, to the waved, bright purple front lobe. The edges of the side lobes of the lip are purple; the fleshy column is of cream-white, with purple margin and tip. Mr. Stafford remarks that there is great variation in the colour of the flowers of the different plants, one extreme form having a showy yellow lip, while another has the front and side lobes of the lip nearly black.

Flowers of three varieties of *Sophro-Cattleya* × *Geo. Hardy* (*Sophonitis grandiflora* × *Cattleya Aclandiae*) were likewise sent at the same time. All are handsome, but they differ in the degree of intensity of the purplish-red hue of the sepals and petals, and of the orange tint in the centre, and that of the rose-purple of the front lobe of the lip. The column of one variety is almost entirely white, that of another nearly wholly of a purple colour, and the third is white, with purple markings on the apex.

CATTLEYA HARRISONIANA.

On the occasion of a recent visit to the garden of Ludwig Mond, Esq., The Poplars, Avenue Road, St. John's Wood, a shelf full of this pretty species was observed in the *Cattleya*-house. The plants, which are very vigorous and in great beauty, have been in bloom for some time. The flowers, numerous produced on the plants, are rose-pink, with an orange-coloured centre. The plant is regarded as being a form of *C. Loddigesii*, the colour of the flower differing according to the locality in which it is found. A few of the nearly white variety, and several of the form known as "violacea," are among them, and Mr. Clarke, the head gardener at The Poplars, considers it one of the most useful of *Cattleyas*, and the easiest of all to cultivate if it be kept well up to the light.

The *Cattleya* and *Lælia*-house is lofty, and contains excellent examples of what good management can do with Orchids. Mr. Clarke's method of management is to utilise the lower part of the house for the growing of foliage plants, and the edges of the staging and the wall for *Ficus repens*, *F. radicans*, and similar clinging plants; whilst the best of the Orchids are brought near to the roof glass in hanging baskets or on shelves. Any Orchids which are grown on the lower stages have their positions shifted occasionally, excepting the *Cypripediums*, &c. Thus managed, *Lælia purpurata*, *Cattleya Warszewiczii*, *C. aurea*, and other showy *Cattleyas* and *Lælias* grow vigorously and flower abundantly. The contents of the *Odontoglossum* and the other houses are in fine condition. *Vanda coerulea*, *Lælia harpophylla*, and *Epidendrum vitellinum majus* are here grown cold with success.

THE ROSARY.

AN EASY METHOD OF PROPAGATING ROSES.

MR. C. S. HARRISON, of York, Nebraska, states, in *American Gardening*, that he hit upon an easy way of propagating *Rose Madame Plantier*. The plants grew well in the summer, but they were killed by the winter drought and bright sun acting on the shoots whilst the roots were frozen. The variety would not root from layers, so Mr. Harrison laid out the shoots on the ground one autumn, arranging them like the spokes of a wheel, and covering them with 6 inches of fine earth. This covering was not removed in the spring, and the buds were obliged to come through it. They blossomed wonderfully and grew with great vigour, and he dug up thirty-five fine plants from one hill. Each sprout had thrown out a root. The ground below and above the *Roses* must be of good quality.

AIMÉE VIBERT ROSE.

Though it may not ramble so far as the *Tea Rose Homer*, or *Turner's Crimson Rambler*, it flowers as freely as either, and is one of the nicest and most persistent autumn-blooming white *Roses* that we possess, good for growing on a wall,

climbing a pillar, clothing an arch, or forming a bush. *Aimée Vibert*, perhaps, never looks better than as a wall *Rose*. It makes an admirable garden hedge. The plant should in that case not be trained too trimly, or pruned closely, for treated formally, it, and others like it, lose half their charm. *Aimée Vibert* may be planted by itself, or in company with *Charles Lefebvre*, *Gloire des Rosamenes*, *General Jacqueminot*, *Gloire de Dijon*, *William Allan Richardson*, and *Crimson Rambler*. *D. T. F.*

FOREIGN CORRESPONDENCE.

THE HORTICULTURAL FÊTE.

THE French can organise and carry out floral fêtes in a manner and on a scale which defy rivalry. These fêtes may not advance horticulture, and from an educational point of view cannot, of course, be compared to exhibitions, where each group of flowers or individual plant permits of a leisurely examination. Artificial, therefore, as is every floral fête or "battle of flowers," they have the one great merit of being good for trade, for they must necessarily mean the transference of very large sums of money to the coffers of nurserymen and florists. That is a consummation with which, of course, no horticulturist will quarrel. But they serve a much more important purpose than this: they demonstrate the infinite variety of forms which flowers may be used to adorn, some of which are utilitarian, whilst others are purely extraneous, perhaps even absurd.

Whatever the utility or otherwise of floral fêtes, they have ineradicably fixed their attraction on the minds and in the affections of the French of to-day. Every visitor to the Exposition on Thursday, September 6, must have realised this fact, when the "Fête de l'Horticulture" attracted upwards of 200,000 spectators, most of whom, it should be mentioned, had to pay four tickets, as against the usual single ticket, to enter the grounds. That is to say, instead of paying 35 or 40 centimes to enter, each person had to pay 1 franc 60 centimes. As the fête was the great attraction of the day, it is obvious that most of those who entered the Exposition on Thursday were chiefly attracted by the fête.

The fête was an unqualified success, for it was favoured with two important conditions necessary to this end:—magnificent weather, and a big crowd. The idea of the fête was due, it seems, to M. Vacherot, the Inspector of the Paris gardens; the proposition was at first received without any enthusiasm, and what was at the beginning only encouraged with luke-warm approbation has turned out to be one of the most successful of the big fête attractions of the Exposition. It was a distinct triumph for M. Vacherot. The procession was formed in the *Salle des Fêtes*, and leaving the *Château d'Eau* at three o'clock, it passed over the *Pont d'Iéna* to the *Trocadero*, and back again over the same bridge to the starting place. The length of the procession was roughly placed at 600 mètres, but progress was slow, and at the particular point at which I managed to establish myself, the procession must have been not much short of an hour in passing.

The procession fell into eight groups, namely:—1, Legumes, a flag, a vehicle ornamented with Legumes, a vehicle of "cucurbitacées," escorted by three children, and a handbarrow decorated with Legumes; 2, Fruits, a banner, a basket of fruit, the *Car Horticulture*, escorted by gardeners, with gardening tools and, banner, *arc de triomphe* of fruits; 3, Flowers and trees, banner, *arc de triomphe* in flowers, a small vehicle *avec parasol et jardinière Louis XV.*, two sedan chairs, cart of forage plants, with field flowers, and chariot of the goddess *Flora*; a *syndicat* of florists with a floral stage, and a bust of *La France* and allegorically-dressed females; at each side of the stage three "pousse-pousse," bound to the chairs with garlands, and with waiting-women dressed in the costume of the *Louis XV.* period, throwing flowers; a chair with four floral

parasols, a porch of Roses, a barrowful of cut flowers, a model of the Palais de l'Horticulture in flowers, and floral motifs; 4, Plants of the greenhouse, and of the colonies; a chariot of Palms, a basket of Orchids, with a lady escorted by a troop of girls throwing flowers; 5, Seeds, four men in the costume of the Louis XV. period, carrying rakes and spades, four porters with baskets of flowers on their backs, four seed-sowers throwing flowers, and two large baskets of flowers; 6, A floral ship, emblematic of the city of Paris; 7, "Service" of the parks and gardens of the Exposition, and including a number of floral chairs escorted by porters, a *saint sacré* with six children, the goddess Flora preceded by six women dressed in the costume of ancient Greece, two vehicles of cut flowers, &c.; 8, Village Suisse, with twenty young men and women throwing the Edelweiss, &c.

It will be obvious from the foregoing that the Committee meant making the fête comprehensive and elaborate, and in this they were more than successful, for at the last moment several unexpected "shows" were permitted to join in the procession. Two of the items had a special journalistic interest, and both excited much admiration. One of these was the Louis XV. car of *Le Jardin*, accompanied with its "typographes en jupon." *Le Jardin*, it seems, has a printing office of its own; the central figure in this car was "une admirable personne aux yeux noirs," emblematic of "Thought;" each of the "comps." carried a pannier with flowers, which were thrown among the crowd. The *Revue Horticole* also had a special carriage which was particularly effective, not only from a floral point of view, but from the fact that, as *Le Figaro* puts it, it was "conduite par une fort jolie personne à la physionomie très honnête. C'est une jeune fille très chaste, qui a consenti à jouer un rôle dans cette fête à cause de son caractère exclusivement professionnel."

The most successful "item" in the long parade was unquestionably the chariot of Monaco, a magnificent arrangement on a large scale of plants and flowers which flourish in this, the most favoured spot in Europe; at the bottom of a throne, on which sat a lady symbolical of the sun, was a floral design with the words "Eternel Printemps"; at the top of the car was a similar design in flowers of "Monaco." This car aroused much enthusiasm; it will be of interest to mention that it was decorated by M. Tessier, the architect of the Pavilion of Monaco in the Rue des Nations, in collaboration with the artist M. Alphonse Visconti, whilst M. Landolfi designed the costumes of the seamen who attended the car.

The fête was a horticultural one in the fullest and most literal sense of the term, and it was a very great as well as a very interesting success. *W. Roberts.*

THE TRANSPLANTATION OF OAKS OF LARGE SIZE.

MOSCHEN is the name of a small village and of a large castle in Upper Silesia, Germany, the residence of the Count Tiele Winckler. A park of wide extent surrounds the castle. In the old part of the park many aged trees are to be found, principally Oaks more than a hundred years old. Adjoining the old park there is also a new one which was laid out about seventeen years ago, and containing, besides other trees, large groups of American Oaks which are about twenty-five years old, and doing well. When laying out these grounds the mistake generally made was also made at this place, viz., the Oaks were planted closely together; it had not been considered how much space a tree requires after 20 or 50 or 100 years. Year after year some of the smaller Oaks were cut down without the end in view being attained; that is, the gain of sufficient room for each tree to develop in.

When I came to this place two years ago, I found the above-mentioned groups of Oaks had grown together again, each tree trying to get the better of its neighbour, and a good many the lower

branches had died off for want of light and air. Wishing to save as many of the trees as possible, I proposed to cut down the worst, to leave the best ones standing in their places, and to transplant the rest. My master, the Count Tiele Winckler, gave his consent, and most liberally granted the means required for carrying out this by no means easy work. Thirteen Oaks were selected to be replanted a year later, and were at once prepared for moving.

In February, 1899, I planted the first seven Oaks,



FIG. 57.—A TRANSPLANTED OAK.

about 32 feet high, as an experiment (and to prove that large Oaks will live after transplantation), in a meadow close by, and about 65 feet apart. As they stand exposed to winds from all sides, I fastened each with three wires until the autumn; since then they have stood without any support. These seven Oaks have grown well till now, pushing out many new shoots from the branches and stems, these making up for the branches that formerly died off, and reforming the crown of the tree. Examining the roots of these trees last autumn, I found young roots more than a foot long.

After this success, the transplanting of the Oaks was continued last winter on a larger scale. Snow was abundant here last winter, and therefore it was possible for me to work on the ground which was

not much frozen. In the course of last December I got the holes dug out for all the large trees, and refilled with soil to two-thirds of their depth.

A cart used for conveying plants in large tubs served me for transplanting my trees to their future places. The trees destined for transplanting were dug out most carefully, every root was saved, damaged rootlets were cut off at once, and all dry or dead branches were cut off before the digging began. Two ropes were fixed to the crown in order to move and keep it in the position required. This done, the ground was dug out rather broader than the cart I used for moving the trees, and in a slanting direction, and on the bottom of the hole boards were laid the width of the wheels of the cart. This done, the cart was pushed by four men backwards down into the hole close to the roots of the tree, the wheels standing on the boards. The tree was then pulled backwards by four to eight men by means of the ropes fixed to the crown; and it was supported by other men to prevent it from falling to the ground. Next the cart was pushed as far as possible underneath the roots, which were lifted into it while the men with the ropes kept the tree upright. With another rope, stem and roots were fastened to the cart to prevent any slipping. Two horses pulled the cart with the tree to the nearest roadway. A kind of sleigh, to which a strong support was affixed, was put behind the cart, all the ropes were loosened, and the tree was carefully laid backwards until the stem rested upon a support put on the sleigh. The branches of the tree did not drag upon nor touch the ground. Everything being ready, the cart was moved by the horses to the place where the tree was to be planted.

Arrived at the place of destination, the cart was brought close to the hole, anything broken or damaged was cut off, and the tree put upright and lifted into the hole. The filling in was done carefully. Although I planted in winter I never used frozen soil for this filling in; all the soil required was covered with stable-dung. I did not fasten the trees at first, but at the end of May I fastened some with wires.

The trees were moved from 2,000 to 4,500 feet. In spring all the trees budded well, but on May 12 they were frost-bitten by —4° Reaumur (8° frost Fahr.), as were most Oaks in this district. The photographs show growth after the 12th of May. I planted at Moschen, fifty-seven *Quercus coccinea*, the tallest 34 feet in height, and the stem at the base 80 cm. (= 31½ inches) in circumference, the width of crown from 19 to 25 feet, twenty-five years old; thirty *Quercus coccinea* and *rubra*, 22 to 25 feet in height, eighty-seven trees altogether. Up to now all of these eighty-seven are growing, and show dark-green leaves. *Hinderlich, Head Gardener, Moschen, Kujan, Silesia, Germany.* [The photographs afford good illustrations of the successful transplantation of the Oak, but it is only necessary after Mr. Hinderlich's clear account to reproduce one of them (fig. 57). Ed.]

PLANT NOTES.

ERIOGONUM WRIGHTII.

I RECEIVED this most attractive Alpine from Herr Sündermann, of Lindau im Bodensee. In habit of growth it is dwarf and creeping, like several other members of the family. The striking feature is in the flowers. These, instead of being yellow, are white tinged with pink, and are borne in the greatest profusion. The whole effect is very feathery and delicate, and in some respects recalls *Tiarella cordifolia*. My plant was in full flower last month (August), which gives it additional interest among Alpines. *A. K. Bulley, Neston, Cheshire.*

ROSCOEA PURPUREA.

One of the things which struck me most during my first autumn visit to Ireland recently, was the vigour and beauty of *Roscoeia purpurea* as grown there as a hardy plant. I observed it in several gardens, notably in the Daisy Hill Nursery at

Newry, the Glasnevin Botanic Gardens, Dublin, and at Mount Usher, in Co. Wicklow. At Newry it was in considerable quantity, and the mass in the bed it occupied was exceedingly fine. The colour is, it is true, not one which is not very popular at the present time in flowers; but this taste is, probably only a passing one, and flowers like the *Rosecea* will possibly be favourites once more. Those who like plants because of their intrinsic beauty or distinctness, will be glad to know that it is quite hardy in such gardens as those named. It is best known as a plant to be grown under glass, but it is, I think, more beautiful in the open. A casual glance reminds one of the *Tradescantias*, but it belongs to a different natural order, and is in reality quite distinct. It is what is appropriately called full purple in colour, and its sessile leaves are lanceolate, and pointed at the extremities. So distinct a plant might well be tried by persons having gardens in a mild climate, and having well-sheltered positions where the plants would be protected from cold winds and severe frosts. It is a native of the Himalayas, and is probably much harder than we suppose. *S. Arnott*.

A CUCUMBER-MELON.

WE are indebted to the courtesy of Sir William T. Thiselton Dyer, Director of Kew, for the opportunity of affording our readers an illustration of a fruit of a supposed hybrid between a Cucumber and Melon. The crossing of these nearly allied genera of the order Cucurbitaceae—*Cucumis sativus* and *C. melo*, the Cucumber and Melon of gardens—is a rare circumstance under cultivation; and were it otherwise, our gardeners would have the greatest difficulty of keeping either of them in their true characters, seeing how often the plants are grown in adjacent pits and frames, and produce their flowers contemporaneously.

The fruit illustrated (fig. 58) was the produce of a plant which was raised from what was ostensibly a Cucumber-seed; and it was sent to the Director of Kew by Mr. Ed. Bryning of Moss Side, Great Marton, Blackpool. The habit, flowers, and leaves were those of a Melon, but the fruit had a curiously-twisted, Cucumber-like form, differing however, in having the basal part thicker than in ordinary Cucumbers. When ripe, as we saw it, the fruit was coloured green and dull yellow, the two colours being distinct, and following the spiral twists of the rind. The aroma was that of a Melon, but the flavour poor and vapid; the flesh, pinkish-yellow, was of no great depth, and the seed cavity much larger than is the case in true Cucumbers, and in that respect it bore some similarity to a Melon when quite ripe. Mr. Bryning did not inform the Director if he had partaken of the fruit in the immature condition, as a Cucumber. The actual length of the fruit figured was $33\frac{1}{2}$ inches; circumference at the base, 8 inches, and at near the tip, $1\frac{1}{2}$ inches. The seeds are flat on one side, and ridged on the other.

LYCHNIS GRANDIFLORA.

(SEE FIG. 59, P. 205.)

AMONG the newer plants whose blooming for the first time in this garden has been looked forward to with interest has been *Lychnis grandiflora*. It was offered in the catalogue of a well-known hardy plant nursery this spring for the first time to my knowledge, although I gather from the *Index Kewensis* that it has been figured in this country. The description given of the plant was somewhat tempting to one who cares for hardy flowers, but the first bloom which opened made me fear that I had only received one of the many disappointments which fall to the lot of him who tries new plants. "A delightful soft salmon" was the colour-description in the catalogue referred to, but the first flower was a combination of green, white, and yellow. It was curious, certainly, but not beautiful. This may have been due to the bad weather, for the flowers which have succeeded the first have



FIG. 58.—A CUCUMBER-MELON.

been quite different. They are best described, as given in the catalogue, as a "soft salmon"—a colour which is hardly represented among perennial flowers at this season. The first bloom opened about the middle of August, and the next, of good colour, in the end of the month. It is seldom that one's experience is quite in accord with catalogue descriptions, but in other directions these have also been wonderfully near the real plant. The height, 1 to $1\frac{1}{2}$ foot high, is almost that of my plant, and the size of the flowers, given as "2 inches or so across," is within the mark. I have to-day measured a bloom which is exactly $2\frac{1}{2}$ inches. The whole plant reminds one in its general appearance of the old Soapwort, with, of course, the difference in colour of the flowers and the better habit. The flowers are produced successively in a small cluster at the top of the stem, and from the axils of the leaves all up the stem also. As was suggested, it has been grown here in a damp position, and, should it be as hardy as I anticipate, it will be an acquisition to my garden. It is, I understand, a native of China and Japan, the stock reaching us from the latter country. *S. Arnott, Carsethorn, by Dumfries, N.B.* [Our figure was taken from a plant shown by Messrs. G. Jackman & Co., of Woking, at the meeting of the R.H.S., August 28 last. Ed.]

INSECT AND FUNGUS FOES OF THE FARMER AND GARDENER.

AS many of our readers are aware, the country is indebted to the Board of Agriculture for the issue of leaflets, written by experts, on a variety of insects and fungi injurious to an enormous extent to farm and garden crops. These handy publications contain succinct, easily understood descriptions of the pests, and methods for their destruction. The two leaflets, which we print in full on the present occasion, treat of the White Root-rot, and the small Ermine Moths.

WHITE ROOT ROT (*ROSELLINIA NECATRIX*).

The Board of Agriculture have had their attention directed to a disease likely, if not checked, to prove destructive among fruit trees. The attack is found to be caused by a fungus belonging to the genus *Rosellinia*, the spawn or mycelium of which spreads below the surface of the soil, extending rapidly from the root of one tree to another. The following information concerning the features of this attack has been taken from an article in the *Kew Bulletin* for 1896.*

Amongst the numerous root diseases of various plants caused by parasitic fungi, none are better known, or extending over a greater area, than the Pourrié of the French, which occurs in France, Italy, Switzerland, Austria, South-west Germany, and has recently been recorded from several widely separated localities in Britain. The fungus causing this disease is called *Rosellinia necatrix*, Prill. and Del. (= *Dematophora necatrix*, Hartig), which frequently devastates vineyards and orchards; its attacks, however, are unfortunately not confined to Vines and fruit trees; Potatoes, Beans, Beet, &c., are also destroyed, and Hartig states that the mycelium soon kills young Maples, Oaks, Beeches, Pines, and Spruces.

The mycelium first attacks and kills the youngest rootlets, and then enters into the larger branches of the root, in which it rapidly spreads and forms an irregular network of slender strands; finally bursting through the cortex, and enveloping the roots in a snow-white, fluffy mycelium, here and there running into slender, cord-like strands, which traverse the soil, and by this means spread from one tree to another. At a later stage of development, numerous minute, black compact masses of mycelium or sclerotia are formed in the cortex of the roots, and from each of these spring several slender spines, each of which bears an abundant crop of conidia or reproductive bodies at its tip. In addition to the white mycelium, a very charac-

* *Root Diseases caused by Fungi*, by Geo. Massee, F.L.S. *Kew Bulletin*, January, 1896, p. 1.

teristic pale brown or olive mycelium is also present on the surface of the roots, formed of septate or jointed threads of variable thickness, having pear-shaped swellings at intervals; these swollen portions finally become free by the disappearance of the intermediate portions of the mycelium, and form bodies capable of germinating and giving origin to a new crop of mycelium. Under certain conditions some of the sclerotia, instead of producing the spine-like bodies bearing conidia, become converted into hollow spheres or pycnidia, containing in their interior numerous minute reproductive bodies or stylospores, which germinate at once and produce new plants. Finally, the highest, or ascigerous form of fruit is rare, and only develops on old trunks that have been dead or decayed for a long time.

9 inches to a foot deep, round each, care being taken to throw the excavated soil on the diseased portion, and not outside of it. This method, which was first suggested by Hartig for the purpose of preventing the spread of subterranean fungi in the German forests, cannot be too strongly commended, especially where the diseased patches are small in area. The amount of success depends entirely on the thoroughness, combined with an intelligent method, of carrying out the work. Half attempts invariably result in a loss of time and labour without benefit. It may be enough to point out that the disease may be spread by the spores of the fungus, by infected soil carried on the shoes of labourers, by dirty tools, wheels of carts, animals, &c., from diseased centres. Diseased and fallen trees, and especially stumps and roots, should be at once

inch from tip to tip of the wings. The general colour of the fore wings is white or grey, sparsely traversed on the upper surface by irregular rows of small black spots, hence the name "Ermine Moths." The thorax, or portion of the body from which the wings spring, is usually also supplied with similar marks. The hind wings are provided with a long fringe, and they, as well as the lower surface of the fore wings, are brownish. The caterpillar is about three-quarters of an inch in length, of a greyish or yellowish colour, plentifully supplied with black or dark brown spots, and possesses sixteen feet. It tapers markedly both before and behind. When disturbed it lowers itself to the ground by a silken thread.

The commonest species are:—*H. padella* L. (*H. variabilis*, Zell.), with a wing stretch of about four-fifths of an inch. The upper surface of the fore wings is bluish or greyish-white, traversed longitudinally by three irregular rows of black spots (about thirty in all), the hind wings being greyish-brown. The caterpillar has a dark head, and a body covered by wart-like tubercles from which hair springs. This species is met with on Plum, Apple, Hawthorn, Sloe, Mountain Ash, &c.

H. evonymella L. (*H. padi*, Zell.), measures nearly an inch across the wings. The upper surface of the fore wings is lustrous-white in colour, and shows five rows of black spots (over forty in all). In appearance the caterpillar closely resembles the former. This species generally feeds on Bird Cherry, and is the species most usually met with in the North of England.

The "Small Ermine" that frequents Apple-trees is generally regarded as a distinct species (*H. mallinella*, Zell.), but, in any case, it so closely resembles *H. padella*, as to be practically indistinguishable.

Life-history.—The Ermine Moths that damage British trees have all a similar life-history. From about the middle of July till the middle of August, for the most part, they are on the wing, at which time they lay their eggs in clusters on the buds and shoots of the trees already indicated. In the course of the autumn, or in the following spring, the eggs hatch and produce caterpillars, which in the month of May spin a veil-like web, under which they live gregariously in detached colonies. At this time the caterpillars feed voraciously, so that destruction of the foliage of the food-plant proceeds rapidly. As the creatures increase in size and find it necessary to secure more food, they spread their webs over a larger and larger portion of the tree or bush on which they live, until, in many cases, but little of the plant may remain uncovered.

When full grown the caterpillar spins for itself a tough greyish cocoon about the size and shape of a large grain of Oats, and in this protective covering it pupates. This change takes place for the most part in July, the chrysalid-cocoons being situated within the common web. A fortnight later the appearance of the moth completes the life-history.

Preventive and Remedial Measures.—If the colonies of caterpillars are within easy reach, they may be destroyed by crushing by hand, the use of a glove making the process less disagreeable. If the webs are too high to be treated in this way, the branches that they envelop may be cut off and burned, or the "nests" may be burned in their original position, ignition being effected by a torch on the end of a pole.

If water under high pressure from a hose can be applied, the colonies may be effectively destroyed.

Various solutions may be applied by means of a syringe or spraying machine. Of these one of the best is prepared by dissolving 7 lbs. of soft soap in 7 gallons of boiling water. To this, while still hot, half a gallon of paraffin or petroleum oil is added, with vigorous stirring, the whole being diluted with soft water to 25 gallons before use. Solutions of tobacco juice and quassia are also useful.

Whatever measure is employed, it should be put in force as soon as the webs are observed. If too



FIG. 59.—LYCHNIS GRANDIFLORA: FLOWERS PALE SALMON COLOURED.
(SEE P. 204)

Rosellina necatrix is almost entirely confined to heavy clay soils, where the water drains away with difficulty, whereas *Rosellina glomerata*, Viala, an allied, but much rarer fungus, with a similar destructive habit, hitherto observed only in France, is met with attacking plants growing in loose sandy soil, where the subsoil is wet.

Preventive Measures.—Owing to the habit of the fungus in penetrating and spreading in the living tissues of the root of its victim, cure is practically impossible when a plant is once permeated with mycelium; and keeping in view the varied modes of reproduction, facilitating the rapid spread of the disease, no efforts should be spared for preventing this when the presence of the fungus is once detected.

Undoubtedly the most frequent and rapid mode of spreading is by means of the mycelium travelling in the soil, and a good method of isolating diseased patches is to cut a narrow trench, from

destroyed by burning. The soil surrounding diseased stumps should be burned after the stumps have been removed, so as to destroy the smaller diseased portions of the root that remained behind. Quicklime should be mixed with the soil in places from which diseased plants have been removed.

A second preventive method, which has proved of service in France, is to lay bare the trunk as far below the surface of the soil as can be done without injury to the tree, and to densely coat the exposed trunk and adjoining soil with powdered sulphur.

Stagnant water should not be allowed to remain in the soil, as this favours the spread of the fungus.

THE SMALL ERMINE MOTHS (HYPONOMEUTA).

Identification.—The genus *Hyponomeuta* contains a number of species, most of which so closely resemble each other in appearance and in mode of life as to be difficult to distinguish. They are all small moths (*Microlepidoptera*), measuring $\frac{3}{4}$ to 1

long delayed, the caterpillars will have spread themselves over a wider surface, and most of the damage will already have been done.

UNPRECEDENTED FRUIT CROP AT BARHAM COURT.

DESPITE the violent storms that visited most parts of this country on August 3, 4, and 6, the general crop of Apples, Pears, and Plums, is a most abundant one. In the case of many localities the thinning of the fruits effected by the storms was a blessing in disguise, and where the destruction of the trees themselves has been little, there is nothing to regret.

We have recently visited fruit gardens in Worcestershire, Monmouthshire, Staffordshire, Cheshire, and Lancashire, and in all of these counties there remain more than average crops. But in no instance was the prodigality of the season's fruit so strikingly evident as is the case at the gardens adjoining Barham Court, near Maidstone, belonging to Roger Lee, Esq. That experienced fruit grower, Mr. George Woodward, who has had charge of these gardens for many years, declares that he has never seen them so filled with fruit as they are at the present time, and although we have visited the place on many previous occasions, and have never beheld a failure of crop there, we should imagine this to be true. There seemed to be no exception to the rule when we were there last week; all varieties and all the trees were alike; none but had big crops, whilst some afforded such instances of heavy cropping as we have never before seen. Those extraordinary Apple-trees near the paths, that were originally trained as espaliers, but which Mr. Woodward has since allowed to grow in whatever direction they wished, with the result that in some cases they have made large, free-growing bushes, and in others great branches or arms stretching in all sorts of directions, are as heavily laden as any; and the great difficulty at present experienced, is to gather the fruits as fast as they become fit. Pears are even more remarkable than the Apples, because of these there are usually some varieties that fail to fruit in a particular year; but there is none this year. Sixty bushels of fruit of Williams' Bon Chrétien had been gathered the day we were there. Some of the varieties of Pears that most astonished us were Durondeau, with fruits almost as long as those of Beurré Clairgeau, Triomphe de Vienne, Beurré Hardy, Beurré Superfin, Doyenné du Comice, and Passe Crasanne, the last named variety being against a wall.

The more noticeable Apples were Bismarck, Stone's, Golden Spire, Cox's Pomona, Worcester Pearmain, Lord Suffield, Lord Derby, Cox's Orange Pippin, Emperor Alexander, Peasgood's Nonsuch, and the new Allington Pippin, which is succeeding capitally. Mr. Woodward describes it as a better grower than Cox's Orange Pippin, and as very nearly approaching that variety in quality. Damsons have never been so abundant, and possibly from this reason, they, in common with several varieties of Apples and Pears, will be rather smaller than usual. But this remark is not intended to apply generally, for what surprised us most was the fact that the trees have been able to bring such an unprecedented crop to so large a size individually. The Peaches and Nectarines were looking magnificent. Indoors and out of doors there were still heavy crops of fine fruits to be gathered, possibly 2,000 fruits. Mr. Woodward says he has never missed once to have a crop of Peaches. Perhaps one reason of this is, that just now he takes care that someone goes over all the trees, and takes off a leaf here, and half a leaf there, so that the sun may reach the stem these same leaves have a tendency to cover. The green bark then becomes reddened, and this is one—just one of the details that make the crop for next year less uncertain. Mr. Woodward, we should imagine, will have some excellent fruit at the forthcoming show at the Crystal Palace.

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Mode of Planting Bush Fruit.—Gooseberries and Currants of sorts may be planted as bushes for supplying fruit for ordinary purposes. With the exception of the black varieties, the bushes should have long clean stems, as the fruit is not then so liable to be splashed in rainy weather. For dessert purposes, Gooseberries are decidedly best grown as cordons, and trained to wire-trellises, walls, or fences; and this method is the best to adopt when a late supply of Red and White Currants is needed, planting those for the latest supply against a wall having a northern aspect. Raspberries, both summer and autumn fruiters, yield best when trained to wire-trellises. Bush Currants and Gooseberries may be planted in rows from 6 to 8 feet asunder, and 6 feet apart in the rows. Plant triple cordons of Gooseberries and Currants at 3 feet apart; and single cordons at 1 foot apart. Allow a distance of 3 feet between each Raspberry stool for trellis work, and 6 feet between the rows.

Varieties to Plant.—Of Black Currants, Baldwin's Champion, Black Naples, and Lee's Prolific, are three of the best varieties; Ruby Castle, La Versailles, Red Dutch, and Cherry are good Red Currants; and of white varieties, select White Versailles and White Dutch. Of Gooseberries, plant Winham's Industry, Keepsake, Berry's Early Kent, and Crown Bob, in quantity, for supplying green fruits for tarts, preserving, and bottling. For the dessert, Pitmaston Green Gage, Scotch Nutmeg, Speedwell, Red Warrington, Leader, Langley Beauty, Green Walnut, Rumbullion, Winham's Industry, Slaughterman, Leveller, and Ploughboy are twelve excellent sorts. Of Raspberries, Superlative, Carter's Prolific, Baumforth's Seedling, Northumberland, and Filbasket are the best of the red varieties, the first named yielding by far the largest fruits. Of yellow kinds, select Yellow Antwerp and The Guinea, the latter being a comparatively new introduction. Of autumn fruits, Belle de Fontenay and October Red and Yellow are the best.

Need for Top-dressings.—The restoration of fruit-trees showing temporary signs of exhaustion can best be done by affording the roots a top-dressing of new compost, enriched with some good fertiliser. If this be applied to the land annually or bi-annually, according to necessity, the roots will be kept near to the surface, and therefore out of the unsuitable subsoil. Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, all need this attention. One reason why such work is recommended to be done now, is that, the work should be performed while the trees are still clothed with foliage, then new shoots will be made which will quickly enter the new compost. Besides this, the work may be done more expeditiously in favourable weather than in the depth of winter. As much as possible of the old soil should first be removed, even if this necessitates some of the larger roots being laid bare. Before covering these with fresh soil, dress the surface with some bone-meal, and lightly prick it in. If old, thong-like roots are seen, cut notches on them about 3 or 4 inches apart on either side. These incisions will soon callus and emit fibrous roots, which are most useful. For the compost use good turfy-loam, not chopped too finely, and add to this some old lime-rubble, varying in quantity according to the consistency of the loam, some wood-ashes, and a little charred soil. Mix these ingredients together thoroughly, and add the fertiliser immediately before applying the compost. The soil of borders abutting on broad-coped walls will most likely be very dry for a foot or so from the base, and in such cases a good soaking of water should be afforded before the fresh soil is put on. All trees so top-dressed should be given a mulching afterwards.

Vines.—Expose the bunches to sunshine by stopping all lateral growths, and by pushing or tying the leaves on one side when necessary.

Fruit Gathering.—Apples are dropping badly, and this may lead some persons to gather the fruits before they should. But many varieties of Apples, and a few Pears, are now ready for gathering. Of Apples, there are Lord Suffield, Lord Grosvenor, Keswick Codlin, Duchess of Oldenburgh, Wor-

cester Pearmain, Duchess' Favourite, and Ecklinville Seedling, &c.; and of Pears, Williams' Bon Chrétien, Beurré de la Assomption, Summer Beurré de Aremberg. By planting the first-named Pear against walls having various aspects, a longer supply of fruits may be obtained. Keep the store or fruit-room well ventilated, and as dark and cool as possible. If it is necessary to hasten the ripening of a few Pears, wrap them in soft paper, place them close together in a box, and remove them to a shelf in a house where a moderate degree of warmth is maintained.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Miltonia vexillaria.—If the plant has been standing in a cool, dry house since it flowered, it may, now that the night temperature has dropped, be removed to the cooler end of a Cattleya-house, where the temperature ranges from 58° to 65°; affording it plenty of light, and only a moderate amount of water. Let the young growths be examined frequently, separating adhering leaves. If a plant has not been potted this year, the operation may now be performed, or it may be delayed till the month of March.

Cattleya Bowringiana.—This plant, so soon as it reaches its limit of growth, puts forth new roots at a time when repotting, if necessary, may be done. The plant should be stood in the warmer part of the Cattleya-house. The pot in which it is grown should be thoroughly drained, and the surfacing material consist of equal parts of peat and sphagnum-moss. Unlike most Cattleyas, the roots do not adhere to the pot tenaciously, and if there are but few on the outside, the plant may be turned out without breaking the pot. In order to afford a large area on which the roots may ramble, the pot or pan should be mounded high above the rim. Whilst in active growth, a fair amount of moisture should be afforded, but repotted plants should have but little for a time.

Aërides, Vandas, and other distichous species usually cultivated in sphagnum-moss, should be afforded water sparingly, or mishaps will occur. In some cases the sphagnum-moss will have grown very long, in which event it must be clipped short. The warmer-growing species should be placed where moisture does not accumulate on the leaves, unless it is rapidly dispersed when air and artificial heat are afforded. The cooler growing *Aërides* will run no risks from this cause for the present. The fleshy-leaved *Angræcums* will need careful treatment from this time, only just sufficient water to keep the sphagnum-moss alive being afforded.

The Phalenopsis are mostly in active growth at the root and top, needing to be afforded water with judgment, rather erring on the dry side. In order to be on the safe side, it will be sufficient to moisten the crocks and base of the moss, by dipping in a vessel of water, and occasionally to sprinkle the surface, if the sphagnum-moss begins to whiten. The plants should be ventilated on every favourable occasion through the wall ventilators, and the blinds should not be left down longer than is absolutely necessary. Let high temperatures be avoided, a range of 10°, say from 65° to 75°, being ample at this season, or a trifle lower in cold weather.

Affording Water to Orchids.—In this matter the gardener cannot be too careful at this season, for plants that have finished to grow should be resting, and will need water only in sufficient quantity to prevent shrivelling of the pseudo-bulbs. Those that are still growing will need a more generous supply, but, even here, so many things have to be considered before affording water, and often when the material appears to be dry, the conditions do not warrant an application of water. On dull, cool, moist days, it is better not to afford water if an examination was made the previous day. Damping down will depend on the outside conditions. *Pleiones*, &c., will need but a small amount of water, their pseudo-bulbs being completed and the leaves falling. The deciduous *Calanthes* will still need water as the soil becomes dry. *Catasetums*, *Mormodes*, and *Cynoches* seldom need much water, and now that growth is complete, a very limited quantity will suffice. They should be placed where full sunlight reaches them, so that the new tissues may mature. Chysis of species having completed their pseudo-bulbs, may be removed from the warm division to a light position in the Cattleya-house, and the moisture afforded them gradually diminished.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Cold Frames and Pits.—Now that most of the sowings, which will be wintered in frames, have been made, preparations for planting them out should be undertaken, bearing in mind the need of a firm soil. The running to seed and untimely heading of Cabbages, Lettuces, and Cauliflowers, are mishaps mainly due to an imperfect preparation of the nurse-bed. The same kind of preparation as the Cauliflower requires, holds good for other kinds of vegetables which have to be wintered in pits and frames.

Main Crop Onions.—The bulbs of spring-sown Onions will, in most parts of the country, be well matured, and even those of strong growth if the tops were laid last month, will be fit for lifting. The weather in August was particularly favourable to the proper ripening of the bulbs. If possible, the crop should be removed to some sunny pits, or to cold frames placed to face the south, and left to dry thoroughly, the lights being placed over them in rainy weather. Where these conveniences do not exist, the bulbs must be left on the ground, turning them over every other day. All thick-necked bulbs should be stored apart from the others, and used first.

Asparagus.—In order to prevent wind-waving, the stems should be secured to strong stakes placed at intervals of 2 feet round the sides of the beds, soft twine being drawn along the rows in such a manner as to support the tops. Although the plants generally should not be cut over till the end of next month, all shoots which have become of a yellow tint may be removed, also all those with seeds before the latter drop. Any neglect of this precaution will lead to a lot of labour in eradicating the seedling plants.

Lettuce.—It is now the proper time to sow Lettuce-seeds in cold pits or frames, where the plants will be found to stand the rigors of an ordinary winter, and turn in quicker than those raised in heat. The only protection needed by these plants is a covering of mats in very severe weather. As the seeds should be sown thinly so that the plants have ample space in which to grow, it is not every gardener who can adopt this course, and he must perforce choose a warm sunny border out-of-doors on which to grow the crop. The ground should have been well manured for some earlier crop, and will then need only a moderate dressing of quick-lime and wood-ashes. On heavy soils road-scrappings may be liberally applied. Having deeply dug the ground, make it level, and trample it evenly and regularly before raking it smooth and drawing the drills. The best hardy varieties of Cabbage-Lettuce are Stanstead Park and Lee's Hardy Green, and of Cos the Intermediate and black seed Bath.

Spring Cabbages.—The plants raised from the sowing made about July 17 will be now fit for planting on a prepared plot of land. The first to plant out should consist of the stronger plants, the removal of which will afford the remainder space to grow bigger. These, when of fair size, may be set out on land recently cleared of Onions. The plants should be set out in rows 18 inches apart, 1 foot or 15 inches from plant to plant in the row; large growing Cabbages needing more, and small growing ones less space. The land from which a crop of Onions has been taken this month will need to be pointed over or broken up with a Kentish hoe or "graft," trodden firmly, and then roughly raked over. In cold localities and dry soils it is well to plant in drills drawn 4 inches deep.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

Work in the Stoves.—This is the season when the shoots may be thinned, and all lateral growths removed from plants trained to the roof, and the plants afterwards afforded rather less water. Allamandas, Clerodendrons, and similar deciduous trailers in pots may be loosely tied to sticks and transferred to a cooler house, which will prepare them for a period of rest. Re-arrange and turn round the plants on stages or beds, allowing Codiaums, Pandanus, &c., to have plenty of sunshine. To obtain highly-coloured Codiaums suitable for the decoration of the dinner-table, place the pots in saucers suspended from the roof, so that the heads of the plants will get all the light possible,

and afford them regular supplies of manure-water. Ventilate the house freely on hot days, and damp the paths and stages frequently, but syringe the plants and close the house about 4 P.M. If the stove contains a variety of plants, remove the Codiaums and Pandanus to the side stages, that the blinds may be lowered half-way on bright days, for such plants as Alocasias, Marantas, &c. Any plants of such strong-growing species as Alocasia Thibautiana, intended for specimens next season, and that are now pot-bound, may be moved to pots two sizes larger, using a fibrous compost of equal parts, peat and loam (hand picked), to which should be added some fresh sphagnum-moss, silver sand, charcoal, and clean crocks. Place the plants several inches lower in the new pots than they were in the old ones, which will encourage the stems to make fresh roots.

Poinsettias should now be afforded weak guano-water two or three times a week, a free circulation of air, and full exposure to sunshine. Syringe them each morning and afternoon; and afford a night temperature of 70°. When the earliest plants set their buds and growth ceases, water should be applied very carefully for a week or two, and a less humid atmosphere maintained; but when the bracts commence to develop, they may again be afforded more liberal treatment, and a night temperature of 75° to 80°.

Clivias (Imantophyllums).—After these have rested, top-dress them with rich soil and put them in a light-house for the winter, where they will have a night temperature of about 55°.

Begonia Gloire de Lorraine.—Tie all the leading shoots to very neat sticks, and place the plants on shelves in the warmest part of the stove. This plant, is specially adapted for use in hanging baskets, and as it does not require much root room, baskets about 9 inches in diameter are quite large enough. Line these baskets with common wood-moss, cut with a spade, and press the moss outwards so as to hide the wires. One plant may be placed in the centre of the basket and staked; then three or four smaller plants should be placed round it to droop over the sides. Fill in the basket with light sandy mould, and syringe frequently to keep the moss fresh.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Ilchester, Abbotsbury Castle, Dorsetshire.

Violets.—The beds in which the runners were planted in the spring should be freed from all weeds, and afforded water copiously, as well as some not over-powerful liquid-manure, the latter being poured on the middle space between the rows, and not close to the plants. Twice a week during this sunny weather will not be often to apply water, and once a fortnight manure-water. The extra vigour thus imparted to the plants will render them less liable to leaf-diseases, or to attacks of red-spider. Should the last-named pest infest the foliage, let soot-water or diluted nicotine solutions be applied by means of a syringe, placing the nozzle beneath the foliage meanwhile. Let all lateral shoots or runners be pinched off as they show, and thus afford strength to the chief crown, from which the finest blossoms are obtained.

Layering trees and shrubs.—Layering, if done at this season, of Cupressus, Thuia, Thuiopsis, and Juniperus, will result in rooted plants being obtained in two years. First, some stout stakes 2 to 3 feet long by 1 inch in diameter should be pointed, and after digging up the soil where a branch is to be layered, let a stake be firmly driven into the ground; then give the branch to be layered, which should be two years old, a sharp twist so as to cause the bark to be ruptured near the base of the stake, to which it should be secured with a stout peg 10 inches long. Having done this, bring the shoot gently up towards the stake, and tie it securely top and bottom in an erect position. The soil, or a mixture of better soil if it be poor, should be placed round the layer with a trowel. This fresh soil may, in the case of plants not needing peat, consist of stiffish loam and sand, and should be run through a 1-inch meshed sieve or screen. Such a soil enables a layer to be lifted when rooted with a compact root-mass. The layers, when the job is finished and the soil made firm, should rise a few inches above the ground level; and, to render the application of water more certain, a shallow basin should be made round the layer.

Choice Shrubs.—The same precaution is necessary with other plants, but the method of layering differs. Privets, Ribes, Rhus, Weigelas, Euonymus, Caryopteris, Escallonia, Forsythias, Cornus, Corylus, and Tamarisk, root quite easily if shoots of a good length be buried in fairly rich soil, and kept in position by means of stout, wooden hooks; these will be ready for transplanting within a year. Layers of Althæa frutex, Azara, Baccharis, Berberis, Broussonetia, Buddleia, Calycanthus, Camellia japonica, Cercis, Cotoneaster, Daphniphyllum, Diplopappus, Eleagnus, Eugenia, Griselinia, Hymenanthera, Jasminum, Magnolia both evergreen and deciduous; and Myrtle, Olearia, Rhamnus, Styx japonicum, and Tetra-thera ferruginea, root freely if the shoots are "tongued" after the manner of Carnation layers. It is also best to prepare a special compost of loam, turfy-peat, leaf-mould, and sand. The layers should be secured in the manner described above.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Figs.—The principal object of the gardener at this season should be the maturing of the young growth, which is accomplished by reducing the amount of water afforded, liberating the fruiting shoots from the trellis, and allowing them to approach the glass as near as possible without touching it, and full exposure to the sun. If the wood is long-jointed and sappy, it may be advisable to partially lift the roots, remove a few of the strongest and least fibrous ones, and maintain more warmth and dryer atmosphere in the house, but reducing the degree of warmth at night to the normal. If a border be wet and sour, the Fig seldom ripens its wood satisfactorily, and generally casts the first crop of fruit. Suck borders should be renovated in the following manner: take one tree at a time, and carefully remove with a digging the soil to within 2 feet of the stem, and to a depth of 3 feet, digging out the soil from beneath trees, so as to leave a small ball to each, the size of which should correspond with the size and age of the tree. Underneath each ball and covering the bottom of the border some hard drainage material, say, lime, rubble, and chalk, should be placed to the depth of 1 foot, and over it turves packed close together, then partially fill up with a compost of turfy loam one-half, and lime rubble and road grit, each a quarter, together with a small quantity of half-inch bones. The roots may be spread out as the filling-in proceeds. All being finished and made firm, afford the border water copiously and cover with a layer of dry soil. The trees should be syringed two or three times a day for fourteen days afterwards. When the time to force the trees arrives a mass of warm stable-dung and tree-leaves placed on the border will soon set up activity in the roots, on which the safety of the first crop generally depends.

Early Pot Figs.—These should now be well ripened and therefore fit for being placed out-of-doors in a sunny corner, and the balls top-dressed whilst the roots are still active enough to seize upon the new soil. Top-dressings for the Fig should consist of good turfy loam, bone-meal, and as much lime-rubble as will make the whole porous. Late trees in tubs or pots, with developing fruits, should be placed in a warm-house before the end of the present month, and be plunged, if convenient, in a mild hot-bed. The house should be well ventilated until the vapour from the hot-bed has been got rid of. Apply water carefully, and keep a temperature of 65° to 70° at night.

The Pinery.—A re-arrangement of the plants is usually advisable at about the present date, old stools left to produce suckers being removed, suckers potted up, the remaining plants re-arranged, and the different batches of winter and spring fruited placed together. A gradual reduction in the temperature may now begin, and less moisture be afforded at the root, and less humidity in the air. When replugging the plants, they should be kept as near to the glass as is consistent with safety. Pot-bound plants may have a small shift to enable them to grow without check during the winter; any others showing fruit should be top-dressed. Newly potted suckers should be kept rather close for a month after being potted. The well-established plants should be afforded air freely on sunny days, and the houses closed early, the temperature being permitted to reach 80°, but letting it fall to 65° to 70° during the night.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPT. 18 { Dahlia Show at the Royal Aquarium, Westminster (three days).

SALES.

MONDAY, SEPT. 17.—Bulbs at Stevens' Rooms, 38, King Street, W.C.

TUESDAY, SEPT. 18.—Nursery Stock, St. John's Road Park, Blackheath.

WEDNESDAY, SEPT. 19.—Bulbs at Stevens' Rooms.

THURSDAY, SEPT. 20.—Clearance Sale, The Floral Nurseries, Castle Hill, Maidenhead.

FRIDAY, SEPT. 21.—Choice Hybrids, at Protheroe & Morris's rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—57.4°.

ACTUAL TEMPERATURES:

LONDON.—September 12 (6 P.M.): Max. 71°; Min. 50°.

Weather sunny and genial; nights cool.

PROVINCES.—September 12 (6 P.M.): Max. 63°, Ipswich; Min., 54°, off Peterhead.

The Experimental Origin of a New Species.

On this subject M. HUGO DE VRIES contributes a paper to the *Comptes Rendus de l'Académie des Sciences* for July 9, from which we extract the following particulars:—"In my experimental garden in Amsterdam," he says, "a new species of a plant was developed under experimental conditions which enabled me to follow exactly every phase of the phenomenon. In my opinion species are not produced by a prolonged selection of marked individual variations, as is ordinarily thought to be the case. This idea is contrary to all that the experiments of agriculturists have told us concerning selection.

The species under consideration is produced suddenly, with all the characteristics of an ordinary species, and especially with that absolute fixity which is the peculiar attribute of a species.

Needless to say this is an elementary species, a small species, as it is usually called, and not a Linnean or collective species. Evidently these latter can only be produced by a successive accumulation of specific elementary characteristics.

The new species is the product of an Onagraceous plant, described under the name of *Eriogonum Lamarckiana*, from which it differs not in one feature but in all its organs. I shall call it *OE. gigas*, as it is much stronger and more robust than the parent species.

The principal distinctive characteristics are the following: the radical leaves are much wider, the petiole is long, the base of the blade is not much narrowed, but shortened abruptly. This is especially the case in the leaves of the young rosettes, and by this it is always very easy to distinguish between the two types from the first weeks of growth. In the ulterior radical leaves the difference is less marked, it always

remains so far evident that the plants can be distinguished at a glance.

The stems are larger and stronger, about the same height as those of *OE. Lamarckiana*. The internodes are shorter and more numerous, the leaves larger and usually recurved, covering the stem more or less closely, and giving the plant a peculiar effect. The inflorescences are very robust, with well developed bracts and very large and numerous flowers forming a larger and more compact head than that of the parent species. The fruits are short and thick, of conical shape; the seeds very large.

From this it seems that the plant is easily recognisable at every stage, whether it occurs under cultivation or spontaneously.

But it has only been found once, and was represented by a single individual. This appeared in the Professor's experiments during 1895 and 1896, which included several thousand examples, more than a thousand of which flowered the first year. Onagraceous plants, as is known, are some annual, others biennial.

At the flowering season, in August, 1895, Dr. DE VRIES selected among the specimens still in the rosette stage, thirty of the strongest and finest. They were then cultivated too closely together; the leaves, for that reason, were too long, so that it was impossible to judge of the plants exactly. He set them further apart, and they sent up stems in the next year, 1896. At the time of flowering one plant differed from the rest by its more robust habit, denser leaves, larger flowers, and shorter fruits. This was the parent plant of the new species, *OE. gigas*. As these characteristics indicated the possibility of a new form, the Professor cut the flowers and young fruits, and tied up the flower buds in transparent parchment that they might be fertilised by their own pollen. Thus he succeeded in gathering pure seed. The seeds yielded, in 1897, about 450 plants, which, without exception, exhibited the before-mentioned features of *OE. gigas*. But as he had not known the parent plant before it flowered, he had to await the flowering of the new generation to be sure of its identity. For this purpose he grew a hundred of these plants; most of them produced stems and flowers which quite repeated the characteristics of the parent plant.

The new species, therefore, remained constant from the first generation, with no trace of atavism. It has remained so during the three following generations, in 1898, 1899, and 1900. Professor DE VRIES further speaks of the grandparents of my plants in 1895 and 1896. He had cultivated them for three successive generations which flowered in 1887, 1889, and 1891, all specimens chosen as seed-bearers being biennials. Their numbers were 9, 6, and 10 in these three generations. They flowered each time on an isolated patch of ground, but were fecundated and intercrossed by insects. These plants all showed the pure type of *OE. Lamarckiana*. It was in the midst of the numerous specimens derived from these parents that the new specific type appeared.

The production of *OE. gigas* was therefore sudden, without intermediation or visible preparation, as it has been definitive, with abundant characteristics and no reversion to the primitive type.

VIEW IN THE GROUNDS AT HIGHBURY, BIRMINGHAM, THE SEAT OF THE RT. HON. J. CHAMBERLAIN.—In our last issue we gave an illustration of a view in the Colonial Secretary's garden at Highbury, and in the present one we give another, representing a portion of the lake,

with its characteristic vegetation, and a pretty glade, bordered by exotic shrubs and trees (see Supplementary Illustration). That such a pleasantly rural scene should have been created in a Birmingham suburb speaks volumes for the good taste of the proprietor, and the skill of the landscape gardener.

KINGSTON FRONT FLOWER-GARDENS.—The presentation of the thirty-five prizes given by the Mayor of Kingston-on-Thames to the successful competitors in the front flower-gardens, window-box, and allotments competition, which took place in the large art room of the Technical Institute, on Saturday afternoon last, proved to be a singularly pleasant and acceptable function. The attendance was large, and every one of the successful competitors was present. The Mayor, Alderman MOATT, presided, and introduced Mr. J. WRIGHT, V.M.H., as one of the judges of the gardens, to give a preliminary address. This was of a very interesting and expository kind, dealing with all the requirements of the County Technical Education Committee in relation to the judging of flower gardens, and various other matters. The prizes were then presented by Sir TREVOR LAWRENCE, President of the Royal Horticultural Society, who followed with an interesting address, in the course of which he contrasted the horticulture of England with what he had seen on the continent, much to our advantage. He dealt also with the growth of gardening, showing that our gardens were to-day in trees, shrubs, fruit, flowers, and vegetables, almost exclusively tenanted by the introductions from other countries. At the conclusion of the address, which was most heartily applauded, Mr. W. DREWITT proposed and Alderman BAKER seconded a vote of thanks to Sir TREVOR, to which the Baronet amusingly responded. A vote of thanks to the Mayor was proposed by Mr. HUGH MACAN, County Technical Education Secretary, and seconded by Mr. A. DEAN.

THE SALE OF POISONS.—Many of our readers will be interested to know that the firm of W. WOOD & SON, Ltd., Wood Green, dealers in horticultural sundries, have established a wholesale and retail manufacturing chemistry department, under the management of a qualified pharmaceutical chemist; and gardeners can obtain of them direct certain requisites without having to go to the local chemist. The firm does not inform us if they deal in proprietary articles of a poisonous nature as well.

YORKSHIRE NATURALISTS' UNION.—The Fungus Foray connected with the Yorkshire Naturalists' Union will be held at Whitby, September 15 to 22 inclusive. Headquarters at Nineteenlands Farm, near Whitby. Mycologists generally are invited to attend.

FLOWERS IN SEASON.—A collection of flowers of seedling varieties of the Dahlia reach us from Mr. J. ARNOLD, Stoke, near Devonport, who appears to have a special admiration for names having a military association. Thus we find Lord Roberts, a whitish flower with a very slight tinge of mauve colour; General Hector Madonald, pale mauve colour, of considerable size, and one of the best received; Captain Lambton, rich deep purple; General French, rose-scarlet, with darker centre; General Baden-Powell, pretty pink colour, with white centre (very commendable); Lady Sarah Wilson, deep mauve colour, with straw-coloured centre; Rt. Hon. Joseph Chamberlain, crimson; General Buller, pink colour, shaded with orange; Lord Methuen, scarlet, with shade of purple the reverse of the petals; Bugler Dunne, a bright scarlet flower, rather small in size, and possessing an open centre; and an unnamed seedling of which two large malformed flowers were received. The colour of this seedling is rich mauve, and the petals are very long. The variety may be one of some merit, but the blooms before us are not average ones. All the varieties belong to the Cactus-like group, so rich in novelties at the present time.

BOTANICAL MAGAZINE.—The September number contains plates of the following:—

Colocasia antiquorum var. *Fontanesii*.—This variety, according to SCHOTT, differs from the type in the shortness of the suckers, in the violet petioles, and more oblong, obscurely green blade of the leaf with violet margins. The plant figured has the expanded spathe of a bright primrose colour. The tube is of a bright red-purple colour, and 3 inches in length. India.

Asparagus umbellatus.—A plant remarkable for the large size of its flowers, which are usually collected into simple umbels at the tips of the branchlets. The stems are climbing, woody, and terete below; leaves minute, deltoid; cladodes in fascicles of three to ten. Anthers golden-yellow; berry globose, half an inch in diameter, one-seeded, and bright red. Madeira and Canaries.

Iris stenophylla.—Figured in these pages. March 17, 1900, p. 171.

Pedicularis curvipes.—A Himalayan species of a rather numerous genus. A slender herb with decussate, decumbent stems; leaves scattered, glabrous, pinnatisect, segments seven to eleven; with pink and white flowers.

Corylopsis pauciflora.—A native of Japan, and allied to *Hamamelis*; figured in the *Gard. Chron.*, 1899, vol. ii., p. 24.

MAMMOTH BEGONIAS.—Most remarkable double flowers of tuberous-rooted Begonias are kindly sent us by the Rev. E. LASCELLES, Newton St. Lee Rectory, Bristol, gr., Mr. C. F. LANGDON. The first of these is an intensely bright scarlet, rather flat flower named *W. Sparshot*. It measures $6\frac{1}{2}$ inches across, and weighs $1\frac{1}{2}$ ozs. Another one, named *Marchioness of Bath*, is a white variety, and measures 5 inches across and $3\frac{1}{2}$ inches in depth, whilst its weight without the foot-stalk turned 3 ozs. The remaining one, named *W. King*, is fiery salmon in colour, and measures 5 ins. across and 4 inches in depth, its weight being more than $2\frac{1}{2}$ ozs. without the stalk. Notwithstanding the immense size and weight of the flowers, the two last-named varieties have such stout stems that they are as perfectly erect in habit as any known as "starers," and need no support whatever. The scarlet one, although the least heavy of them, is not quite erect. We judge the flowers to be from plants growing in pots, and the size and excellence of them to be mainly due to perfection of strain and partly to good cultivation.

IMPORTATION OF AMERICAN FRUIT.—Our transatlantic contemporary, *American Gardening*, August 18, commenting on our remarks on the fruit crops in the United Kingdom, has the sensible remark on the necessity of the Americans sending to us only fruit of the finest quality. We hope they will, for their own sake, as well as ours, as it is pretty certain that rates will be low all round at the beginning of the season, and only first-class produce will fetch remunerative prices.

EAGLESFIELD HORTICULTURAL SOCIETY.—The annual show at Eaglesfield, Dumfriesshire, N.B., took place at Newlands on Saturday, September 1. The fixture is the largest of the kind in the South of Scotland, and the entries this year showed a large advance on previous years' figures. The display of flowers, fruit, &c., was an exceedingly good one.

STOCK-TAKING: AUGUST.—The Board of Trade Returns for the month of August, are throughout of a better general tone than those for the preceding month, and compare most favourably with those for the same period in 1899, when the Chinese embargo was unthought of by most folk, and the rupture between the South African Republics and the mother country had not become a fact. Trade with China continued good up to the close of the half-year, and to-day we learn that, even with all the upsetting caused by the war, things are not nearly so bad in Cape Colony as had been

anticipated at the beginning of the year. The imports for the month of August amounted to £42,097,059, as against £40,693,398 for the same period last year, showing an increase of £1,403,661. The "averages," recorded elsewhere, give a very fair idea as to the actual and expected imports of cereals. What may be termed "provisions," cheese, bacon, &c., show a large supply. The annexed extracts from the summary table of imports, to some extent indicate the variations in value:—

IMPORTS.	1899.	1900.	Difference.
	£	£	£
Total value ...	40,693,398	42,097,059	+1,403,661
(A.) Articles of food and drink—duty free ...	14,822,711	15,448,189	+625,478
(B.) Articles of food & drink—dutiable ...	1,925,291	2,081,419	+156,128
Raw materials for textile manufactures ...	3,656,428	3,074,896	-18,468
Raw materials for sundry industries and manufactures ...	6,512,586	7,232,006	+769,420
(A.) Miscellaneous articles ...	1,179,495	1,233,676	+54,111
(B.) Parcel Post ...	81,711	94,621	+12,910

The amount of fruit flooding the markets of late bears ample testimony to the condition of that business. It has been a season of great rejoicing in London to every boy and girl, who can appreciate Greengages at a halfpenny per pound; Egg, Orleans, and other Plums at very low rates, keeping company in that respect with Apples, and occasionally Pears. [What many of our foreign friends have netted over some of these shipments 'tis they themselves best know. The following figures will be of interest to all:—

IMPORTS.	1899.	1900.	Difference.
	Bushels.	Cwt.	Value.
Fruits, raw:—			£.
Apples ...	181,315	59,750	+1,671
Apricots and Peaches ...	.....	3,398	+6,589
Bananas... bunches ...	.....	109,738	+47,106
Cherries... ..	13,780	17,032	+10,083
Currants ... ..	.....	8,461	+6,111
Gooseberries ... ..	.....	602	+302
Grapes	305,871	146,815	-8,102
Lemons	144,280	80,730	+244
Nuts—Almonds (cwt.) ...	3,870	8,169	+8,096
Others, used as fruit (value) ... ..	.....	26,483	-10,391
Oranges	18,647	14,454	+1,676
Pears	219,969	199,107	+62,023
Plums	223,048	290,999	+147,640
Strawberries ... ..	.....	146	+137
Unenumerated... ..	440,207	208,498	-36,120
Vegetables, raw:—			
Onions bush.	561,821	598,773	+2,549
Potatoes cwt.	118,865	180,483	+11,869
Tomatoes ... .. "	....	115,152	+114,879
Vegetables, raw, unenumerated value	£229,741	£56,196	-164,545

The "difference" column is occasionally astounding in its story—see the items of Tomatoes, Plums, &c. The "unenumerated" figures, under vegetables, suggest that in many things we have succeeded in doing our own growing—let us hope so. We might recommend to foreign growers of Tomatoes, the cultivation of a better shaped article; it will pay. Respecting the importation of Oranges, it may be of interest to observe, that in the yearly record of importations, the United States had 22,313 bushels to their credit—these, from California, were of the seedless variety, recently noticed here. The largest imports are from Spain, which sent us nearly 6,225,000 bushels; Italy following, then Turkey, Portugal, and the Azores. France sends us fewer than Egypt. The value of the imports for the past eight

months is £337,967,068; for the same period last year, £317,327,164; showing an increase for 1900 of £20,639,904. Our

EXPORTS

amount to the round sum of £24,984,623, against £22,258,538, a gain of £2,726,085. This is a very satisfactory gain; coal showing the largest increase, and new ships built for foreigners standing out well from the others. The total excess of raw materials is placed at £1,627,238. The only three sectional decreases are found in living animals, yarns, and textiles, and machinery and millwork. The amount of exports for the past eight months is £193,911,944, as against £171,976,390 for the same period in 1899, or an increase of £21,935,554; a very creditable result, notwithstanding our present engagements abroad.

NICOTICIDE.—A well known gardener and member of the Fruit Committee of the Royal Horticultural Society, reports as follows on a bottle of this insecticide which we sent to him for trial:—"I have given it a fair trial against two other preparations of a similar nature, and find that the Nicotidine is certainly the cheapest, as I can find no difference whatever when the three are used of equal strength; therefore the Nicotidine is, when bought in small bottles to fume 8,000 cubic feet, the size of bottle you sent me, a saving of 2s. per bottle. The preparation seems to be very similar to the others, although it has a slightly different smell. The receptacles for fuming are convenient, and may be packed in a small compass when not in use."

FRUIT CROPS OF THE UNITED STATES.—

According to the latest advices it would seem that, taken on the whole, the season has been a fair one for fruit. Summer and autumn Apples have been abundant, although a large amount of fruit has dropped from the trees on account of drought and wind. Winter Apples are not bearing so heavily as the earlier varieties. Where sprayed, Apples will be of a fair quality, but where this has been omitted there will be a lot of wormy and scabby fruit. Plums are scarce, and the curculio, where spraying was neglected, has been very injurious. A number of Peach-trees are reported as having succumbed this season to the effects of the intense cold of the winter of 1898–99, but otherwise Peach-orchards are, as a rule, in heavy bearing, with fruit of a first-class quality. Varying reports have been received regarding Pears, ranging from "light" to "loaded." Cherries were a comparatively poor crop, and the black rust still assails the trees. Grapes give promise of a good yield, as usual. Strawberries suffered considerably from drought, and other small fruits raised for market have been few; but Huckleberries, Raspberries, and other wild fruits have been abundant.

PUBLICATIONS RECEIVED.—*Agricultural Gazette of New South Wales*, July, 1900, vol. xl., part 7. W. A. Gullick, Government Printer, Sydney. — *Bulletin de la Société Botanique de France*, Tome Quaranti-Sixième. — *Minnesota Botanical Studies*, second series, part iv., August 15, 1900. Minneapolis, Minn. — *Michigan State Agricultural College, Bulletin* 185. Fertilizer Analyses, by R. C. Keezid and L. Van Wormer. *Bulletin* 181. Soil Tests on Upland and Muck; Clover and Sand, Lucerne Notes, &c.—*The Journal of Botany*, No. 453, vol. xxxviii, September, 1900. Canada: Department of Agriculture; Central Experimental Farm.—*Report of the Agriculturist* (W. T. Macoun, 1899). This issue contains descriptive accounts of Russian Apples and others seldom seen. Of Russian Apple seedlings 133 have fruited during the past three years. A large proportion seem to be just as good as named Russian Apples that have been disseminated in Canada. No late keepers have as yet been found among them. Some interesting remarks on Apple culture, by Mr. W. Tremblay farming land at Chicoutimi, in lat. 48.26 N., where the winter cold frequently falls to 38° below Zero Fahr., and rises to 104°, are included in the report.—*Japanese Botanical Magazine*, for July, 1900, containing notices of Eastern Asiatic plants by J. Makumura; on some Japanese Melampyrene, by N. Hiratsuka; and on Japanese Bamboos, by T. Makino, beside a number of papers of a miscellaneous character.—*The Agricultural Journal, Cape of Good Hope*, Cape Town. Townsend, Taylor, & Snashall, Printers.—*Potato Raising, Evidence of Mr. W. T. Macoun, given before the Select Standing Committee on Agriculture and Colonisation*, Ottawa. The U.S. National Herbarium, vol. v., No. 3, August 1, 1900.—*The plant covering of Ocracoke Island*:

A study in the Ecology of the North Carolina Strand Vegetation, Washington. Government Printing Office.—*Nature*: for August 23, 30, and September 6, 1900.—*Agricultural Education. The scheme of the Essex County Council*. By T. S. Diamond and J. H. Nicholas.—*The Orchid Review*, for September, 1900.—*Journal de la Société Nationale D'Horticulture de France*, August, 1900.—*Landwirtschaftliche Jahrbücher*. Edited by Dr. H. Thiel, Berlin. Verlagshandlung Paul Parey.—*Journal of the Society of Arts*, August 31, and September 7, contain articles on the Photography of Colours; The Wine Industry in Chile, Siberian Coal, and The Rubber Industry of Sierra Leone.—*Administration Report of the Government Botanical Gardens and Parks: the Nilgiris*.—*The Rubber Industry in the British South Africa Company's Territories*, by P. Lyttelton Gell. The B. S. A. Co., 15, St. Swithin's Lane, London, E.C.—*Nature Notes*, September, 1900.—*Botanisches Centralblatt*, vol. lxxviii., No. 11.—*Bulletin of the Botanical Department, Jamaica*. Edited by William Fawcett, B.Sc., F.L.S.—*Queensland Agricultural Journal*, July, 1900, vol. vii., part 1.

THE WEATHER IN WEST HERTS.

A WEEK of cold nights and warm days. On four nights the thermometer exposed on the surface of the lawn registered temperatures between 6° and 2° of the freezing point. At 2 feet deep the temperature of the ground has remained very nearly stationary, but at 1 foot deep it has slightly declined. No rain worth mentioning has fallen since the present month began, and no rain-water at all has come through the bare soil percolation gauge since September 2. On most days there has been an unusually good record, for the time of year, of bright sunshine. *E. M., Berkhamsted, Sept. 11.*



HOME CORRESPONDENCE.

CARNATION RABY CASTLE.—Having read Mr. R. Sydenham's note on the saw-edged petalled Mrs. T. W. Lawson, and Mr. W. J. Godfrey's rejoinder, a few words in commendation of the fringed petalled Carnation Raby Castle will not be out of place. I grow several hundreds of Carnations in variety, and always a good clump of Raby Castle, which is a plant that makes good growth, has flowers of a beautiful colour, fragrant, and only the leading flower of each spike bursts its calyx badly. Moreover, it flowers late, and only last week I decorated a dinner-table with Raby Castle and Gloire de Nancy. I have never known a garden where the variety will not thrive, and those who may like Carnations late in the season should give the variety a trial. I cannot grow the old Clove, but Triton, a newer, smooth-petalled Carnation of the old Clove colour, has done well, and is a good flower for exhibition and for cutting. I believe Triton is an introduction of Mr. Turner of Slough. I fail to see why a good fringed Carnation should be excluded from stands of six, twelve, or twenty-four Carnations at the National Carnation and Picotee Society's shows. *T. Down, Wassand, Hull.*

CANON HALL MUSCAT GRAPE.—This is pretty generally admitted by Grape-growers to be the finest quality Grape in cultivation; and to produce good full bunches of this somewhat shy-setting Grape, consisting of its large oval-shaped, amber-coloured berries, is an achievement of which fruit-growers feel proud on account of its having the reputation, whether rightly or wrongly deserved is a matter of opinion, of being a bad "setter." And on this account the Grape is not much grown; and in the "Answers to Correspondents" in last week's issue of the *Gardeners' Chronicle*, p. 180, while mentioning Canon Hall as being distinct from Muscat of Alexandria, it is stated to be "an unsatisfactory doer, the encouragement of whose cultivation is undesirable."

The same may be said of Muscat Hamburg, yet the production of good examples of one or both of these varieties is looked upon as evidence of superior cultivation. The difficulty in the case of Muscat Hamburg is not so much in that of obtaining good full bunches of even-sized berries, as that generally experienced in securing good colour in the same. The grower who succeeds in producing good specimens of fine quality Grapes which have the character of being "unsatisfactory doers," is amply rewarded for his trouble (if any trouble out of the common was experienced) in the knowledge of the fact that he has succeeded in growing good examples of Grapes generally looked upon as being "unsatisfactory doers." Well, I have known fine examples of the Canon Hall Grape to be produced in one of the numerous vineries at Fordingbridge, and right over a water-tank too; and the manager, Mr. Moxham, informed me that the Vines received no special treatment to secure such satisfactory results. The inference to be drawn in these circumstances is that the moisture or vapour arising from the water-tank (which was within a couple of feet of the bunches) had something to do in obtaining or producing such a fine set—conditions quite the opposite to those generally observed at this interesting period as regards the humidity of the atmosphere. Mr. Peter Kay, of Finchley, as I understand, grows the Canon Hall Grape to perfection, but under what conditions of treatment I know not; but readers of the *Gardeners' Chronicle*, including the writer, would, I feel sure, like to be informed on this point. However, I may state my own experience of Canon Hall during the present year. In a span-vinery, 200 feet long and 25 feet wide, I planted, among other varieties—Muscat of Alexandria, Black Hamburg, and Madresfield Court—thirty-four Vines of the Canon Hall, in one half of the house, and in which Tomatoes have been grown up to within a few weeks ago; the house having been treated entirely in accordance with the growing requirements of the Tomato plants; no heat having been turned on in the pipes since the end of March, plenty of fresh air was admitted by the top ventilators daily to secure a sturdy growth in the Tomatoes, a small volume of air being also admitted at night for the same purpose; and owing to the fact of seven or eight thousand plants of Tomatoes in 3-inch pots and boxes for transplanting out-of-doors later on were placed on the borders immediately under the vines of Canon Hall, yet the several bunches which I allowed the strongest rods of Canon Hall to bear set splendidly. The vines were tapped daily with the hand during the time the bunches were in flower, so as to distribute the pollen; and abundance of air was given day and night up to the time the Tomato-plants were cleared out after fruiting, when less air was admitted in the late Grape section of the house only. The Grapes in the first division, including Canon Hall Muscat, having at that time approached the ripening stage, no difference was made in the matter of ventilation during bright sunny weather; and notwithstanding the fact that no artificial heat had been applied, the fruit was fit for consumption at the end of the month of August; and, as a matter of fact, it was cut and sent to market. Therefore, in these circumstances, what conclusion can be drawn respecting the treatment of this fine Grape, which, in my case, has practically been grown and ripened in a cool vinery? Has coddling been responsible for the hitherto generally bad behaviour of the variety under notice? If so, the Grape has obtained an undeserved bad name, and has been in consequence rooted out of many vineries. *H. W. Ward.*

NEW GRAPES.—It is not difficult to imagine the feeling of surprise which must animate some readers of the *Gardeners' Chronicle* who, when they read that a Grape Diamond Jubilee was regarded as good and so new at Shrewsbury recently as to be placed 1st in the class for new Grapes, turn to the reports of the meeting of the Fruit Committee of the Royal Horticultural Society held at the London Drill Hall on September 26 last year, and find it stated that in the opinion of that body, seventeen members being present, the Grape in question too closely resembled Black Morocco to be distinguishable from that variety. The suggestion as to the members of the Committee being biased against the Grape, or are a lot of faddists, are unjust imputations. The Committee arrived at the conclusion it did simply by the appearance of the bunches. But I am sure every member of that body would be pleased to see a fair growing

trial of Diamond Jubilee and Black Morocco, conducted at Chiswick, could a house be spared for the purpose, and at the same time together with those, Lady Hastings, or any other new or assumed new variety. A trial house of this description is badly needed. There is no question but that the Grapes would receive the best possible treatment, and the fairest culture. It is so very difficult to judge of the merits or distinctiveness of any Grape from merely seeing bunches, or even by tasting them, as varying conditions of culture are apt to produce varying results. I should like to see it made a matter of compulsion that new Grapes be tested at Chiswick before any awards are made to them. *A. D.*

POTATOS AT CHISWICK.—The awards of the Committees of the Royal Horticultural Society certainly call for comment. In the published regulations I read that the objects of the committees are:—(1) "To encourage the production of new and improved varieties of fruit, flowers, and vegetables by examining and reporting upon the merits of such as may be submitted to them for the purpose." (2) "To collect and disseminate trustworthy information," &c. A few weeks since, the Fruit and Vegetable Committee had before them a collection of Potatoes, and to Beauty of Hebron gave an Award of Merit. This Potato has been in general cultivation over 20 years; it is popular, and as all will admit, a most useful variety. Even more recently, the same committee honoured the variety Puritan with a similar award. If I mistake not, this variety has already been certificated more than once by the Royal Horticultural Society—of course, under other names; but turning to the reports of the trials of Potatoes at Chiswick, I find that in 1896 the committee say of Beauty of Hebron, "A well-known variety; crop excellent; free from disease." In 1897 it is reported on as, "The soil at Chiswick does not suit this variety, it being weak in growth, and the crop light;" but now, three seasons later, it receives an Award of Merit. But what about the regulations? The variety cannot be called "new" "or improved," and the information which it is intended the committee should disseminate will be of little importance or utility, and instead of its being a matter of the Royal Horticultural Society guiding the public, it is the latter which is guiding the Royal Horticultural Society. Now as to Puritan, some five-and-twenty years ago I paid a great deal of attention to Potatoes; and somewhat about this time Beauty of Hebron was introduced from America. I made a selection from it which produced tubers with a white skin, which I named and sent out as Queen of the Earlies. Three years later Puritan was introduced, which proved to be identical with Queen of the Earlies; and later we had Duke of Albany, Early White Beauty, and White Beauty of Hebron. After repeated trials these all proved to be one and the same thing, but what I wish to get at is this: in 1884, sixteen years ago I sent to Chiswick some of my Queen of the Earlies for trial; the following season I wrote to the superintendent for information respecting the trial, and was told that "the variety was no improvement on existing kinds." Some three seasons later I again sent the same variety and Puritan, but never enquired as to the result. Now, only after a trial of sixteen years, are the merits of this popular variety discovered, and in the case of Beauty of Hebron twenty years at least are required. With such results as this, is it to be wondered that Certificates and Awards of Merit have little or no weight with practical men? *W. J. Godfrey, Epsom.*

CEDRUS ATLANTICA.—I am forwarding for your inspection a branchlet cut from a large specimen-tree of the above species of Cedar, growing in the grounds here. The tree in question is fully 70 feet in height, well furnished with branches to the ground, where the diameter of the crown is 16 yards. The circumference of the main stem at 3 feet from the ground is 13 feet. It has been planted about sixty-five years. My object in sending the branchlet is to show the immense amount of incipient cones thereon. The upper surface of all the branches are furnished in the same way. For several years there have been a few cones on the tree, some of which have ripened and produced fertile seeds. Until this year nothing like the present quantity have been seen. The tree shows no signs as yet of decreased vigour. Can you throw any light on the subject? *H. J. C., Grimston, Tadcaster.* [The branch, a very healthy one, was rather densely furnished with male catkins. Ed.]

MARGUERITE FLOR D'OR.—My attention was called to this beautiful flower at a fancy dress carnival, held here in the Pier Pavilion on the 6th inst., when the daughter of a local nurseryman represented this flower in fancy dress, and gained the first prize. She was entirely covered with flowers of Marguerite Flor d'Or, in a beautiful design of true lovers' knots and hearts, all formed with flowers and foliage. She also wore a crown of the same flowers, mingled with *M. grandiflora*. This induced me as well as many more to pay a visit to the Bognor Fruit and Floral Nurseries, where there is over half an acre of these summer-flowering plants all in full bloom; it makes one wonder why this variety is not more employed in bedding as a cut flower. *L. G., Bognor.*

THE AUBERGINE.—There are at least eight varieties of the Aubergine, to which Dr. Bonavia refers in the *Gardeners' Chronicle* of last week. In

the persistent rainfall during the summer months has been so serious that any attempt towards repairing it will be futile, except in ripening fruits, &c.

THE FRUIT CROP.

Owing to the fact of the wood being well ripened and the absence of late spring frosts, big crops of fruit will be gathered, notwithstanding the destruction caused by wind and rain. Every kind of fruit-tree is cropping heavily, and under the present genial conditions the fruits are ripening very rapidly. Although fruit is grown extensively, especially within the metropolitan area—by such is meant not the immediate vicinity, but including the counties adjoining it—the treatment adopted is very backward, the trees are allowed to bear their natural crop, and when ripe pulled and stored. The question of thinning is never considered, so that when heavy crops occur

1899. He had been assisted by his sister from time to time. He had made no profit on the business during the last twelve months. His household expenses amounted to £380 per annum until last year, when he reduced them to about £4 per week. He sold his business to his sister for £2,000, being compelled to sell it, owing to his being pressed by the bank, who had a mortgage on the nursery and house, besides which he had an overdraft of £250, guaranteed by his sister. His sister had paid creditors to the amount of £400 on his behalf. She might have paid £600 on his behalf. When his sister purchased the place, he fixed the purchase price. He did not consult any of his creditors about it. He attributed his bankruptcy to depreciation in growing crops. The examination was adjourned.

BRITISH ASSOCIATION.

This important meeting opened on Wednesday, September 5, at Bradford, and Sir W. Turner delivered his inaugural address. He said that it was twenty-seven years since the Association met at Bradford, and since its meeting at Dover last year the Association had lost two of its former Presidents. The Duke of Argyll presided at the meeting held at Glasgow so long ago as 1855; Sir J. William Dawson was president at the meeting in Birmingham in 1886.

The President then spoke of the great value of the scientific method of research, of diligence and accuracy—the fundamental qualities in the scientist. By their application, new facts are discovered and tabulated, their order of succession is ascertained, and a wider and more intimate knowledge of the processes of Nature is acquired. But to decide on their true significance a well-balanced mind, and the exercise of prolonged thought and reflection are needed.

Whilst certain principles of research are common to all the sciences, each great division requires specialised arrangements to ensure its progress. Nothing contributes so much to the advancement of knowledge as improvements in the means of observation, either by the discovery of new adjuncts to research, or by a fresh adaptation of old methods. The invention and employment of new and more precise instruments and appliances enable us to appreciate more clearly the signification of phenomena which were previously obscure, and to penetrate more deeply into the mysteries of Nature.

It had long been recognised that the tissues of plants were, to a large extent, composed of minute vesicular bodies, technically called cells. In 1831 the discovery was made by the great botanist, Robert Brown, that in many families of plants a circular spot, which he named areola or nucleus, was present in each cell; and in 1838, M. J. Schleiden published the fact that a similar spot or nucleus was a universal elementary organ in vegetables. In the tissues of animals also structures had begun to be recognised comparable with the cells and nuclei of the vegetable tissues, and in 1839 Theodor Schwann announced the important generalisation that there is one universal principle of development for the elementary part of organisms, however different they may be in appearance, and that this principle is the formation of cells. The enunciation of the fundamental principle that the elementary tissues consisted of cells constituted a step in the progress of biological science, which will for ever stamp the century now drawing to a close with a character and renown equalling those which it has derived from the most brilliant discoveries in the physical sciences. It provided biologists with the visible anatomical units through which the external forces operating on, and the energy generated in, living matter come into play. It dispelled for ever the old mystical idea of the influence exercised by vapours or spirits in living organisms. It supplied the physiologist and pathologist with the specific structures through the agency of which the functions of organisms are discharged in health and disease. It exerted an enormous influence on the progress of practical medicine. A review of the progress of knowledge of the cell may appropriately enter into an address on this occasion.

A cell is a living particle, so minute that it needs a microscope for its examination; it grows in size, maintains itself in a state of activity, responds to the action of stimuli, reproduces its kind, and in the course of time it degenerates and dies. The original conception of its structure, based upon the study of the vegetable tissues, was a minute vesicle enclosed by a definite wall, which exercised chemical or metabolic changes on the surrounding material and secreted into the vesicle its characteristic contents. A similar conception was at first also entertained regarding the cells of animal tissues; but as observations multiplied it was seen that numerous elementary particles, which were obviously in their nature cells, did not possess an enclosing envelope. A wall ceased to have a primary value as a constituent part of a cell, the necessarily vesicular character of which could no longer be entertained.

PROGRESS OF SCIENTIFIC BOTANY.

On Thursday, September 6, the Botanical Section (K.) met, and should have been addressed by Professor S. H. Vines, who was unfortunately prevented by a sudden illness from being



FIG. 60.—AUBERGINE, EARLY DWARF PURPLE.

See note by Dr. E. Bonavia in our issue for September 8, p. 194. Shown by him at the Drill Hall, August 28 last.

France the Aubergine is immensely popular, not merely as a vegetable, but as a plant for table and other decorations. The variety with white fruit is, I think, the only one grown specially for ornamental purposes, and I must say that the large white, egg-like fruits give the plant a very distinct and striking appearance. I saw hundreds of them on market days along the Paris quays. They are grown to about 12 inches or 18 inches high, and each plant bears two or three fruits, and they appear to sell readily at a few pence each. *W. Roberts, 47, Lansdowne Gardens, S.W.*

IRELAND.

THE WEATHER.

The weather has considerably improved, the sunny days for the past few weeks have been very enjoyable, in fact, they are the pleasantest spell we have had for a long time, but the havoc caused by

the fruit is not well developed. The lesson of timely thinning a heavy crop has yet to be learned by the ordinary cultivator in Ireland. *A. O'Neill, Dublin.*

LAW NOTES.

FAILURE OF A NURSERYMAN.

MR. A. E. HIGGOTT, who was until recently a member of the Hampton District Council, and carried on business as a nurseryman in Hollybush Lane, Hampton, appeared for his public examination before the deputy registrar at the Kingston Bankruptcy Court, when he stated that his liabilities amounted to £867, of which £538 was fully secured, and his assets £598. He commenced business in 1889 with a capital of £1,250, which he derived under his father's will. He had been pressed by creditors for money since November,

present, and his address was read in his enforced absence by Dr. D. H. Scott. The address dealt with the progress made by scientific botany in the nineteenth century.

It is generally stated that about 10,000 species of plants were known to Linnæus in the latter half of the eighteenth century, of which about one-tenth were cryptogams; but so rapid was the progress in the study of new plants at that time that the first enumeration of plants published in the nineteenth century—the *Synopsis* of Persoon (1807)—included as many as 20,000 species of phanerogams alone. Turning now to the end of the century we arrive at the following census:—Phanerogams, 105,231; pteridophyta, 3,452; bryophyta, 7,650; thallophyta, 59,263; or a grand total of 175,596 for the approximate number of recognised species of living plants. In a general way the smaller groups represent families of plants which attained their greatest number in long-past geological periods and are now decadent, whilst the existing flora of the world is characterised by the preponderating angiosperms and fungi. In spite of the great increase in the number of known species, it cannot be said that any essentially new type of plant has been discovered during the century. So far as the bounds of the vegetable kingdom have been extended at all it has been by the annexation of groups hitherto regarded as within the sphere of influence of the zoologists. The most notable instance of this has occurred in the case of the bacteria, or schizomycetes, as Nageli termed them. These organisms, discovered by Leeuwenhoek 200 years ago, had always been regarded as infusorian animals until, in 1853, Cohn recognised their vegetable nature and their affinity with the fungi.

CLASSIFICATION.

The classification of plants is a problem which has engaged attention from the very earliest times. Speaking generally, all the earlier systems of classification were more or less artificial, the sub-divisions being based upon the distinctive features of one set of members of the plant. When I say that of all these systems, that proposed by Linnæus (1735) was the most purely artificial, I do not imply any reproach; if it was the most artificial it was at the same time the most serviceable, and its author was fully aware of its artificiality. The system is generally regarded as his most remarkable achievement, but the really great service which Linnæus rendered to science was the clear distinction which he for the first time drew between systems which are artificial and those which are natural. It was in France, where the Linnæan system never secured a firm hold, that the quest of the natural system [was pursued]; and it is to French botanists more particularly that our present classification is due. The discovery of the reproductive processes in cryptogams not only facilitates a natural classification of them, but had the further very important effect of throwing light upon their relation to phanerogams. Perhaps the most striking botanical achievement of the nineteenth century has been the demonstration by Hofmeister's unrivalled researches (1851), that phanerogams and cryptogams are not separated, as was formerly held, by an impassable gulf, but that the higher cryptogams and the lower phanerogams are connected by many common features. The development of the natural classification proceeded for the most part on the assumption of the immutability of species. But since the publication of Darwin's *Origin of Species*, in 1859, the problems of classification have assumed an altogether different aspect. We no longer seek a "system" of classification; we endeavour to determine the mutual relations of plants.

PALEOPHYTOLOGY.

The stimulating influence of the new doctrine was not, however, confined to the investigation of existing plants; it also gave a remarkable impulse to the study of fossil plants, inasmuch as the theory of descent involves the quest of the ancestors of the forms that we now have around us. Marvellous progress has been made in this direction during the 19th century by the labours, in our own country, of Lindley and Hutton, Hooker, Carruthers, and more especially of Williamson. It may be stated generally that the number of existing species has been found to diminish rapidly in the floras of successively older strata. Similarly, the distribution in time of existing natural orders does not coincide with that of existing genera. Moreover, altogether new families of fossil plants have been discovered, and it is of interest to note that all these newly discovered families can be included within the main subdivisions of the existing flora—in fact, no fossil plants have been found which suggest the existence in the past of groups outside the limits of our Phanerogamia, Pteridophyta, Bryophyta, and Thallophyta. In a general way the study of Palæo-botany has proved the development of higher from lower forms in the successive geological periods. Yet we are not able to trace the ancestry of any one of the larger groups of plants.

MORPHOLOGY.

If inquiry be made as to the cause of the great advance in the recognition of the true affinities of plants, and consequently in their classification, which distinguishes the 19th century, I would refer it to the progress made in the study of morphology. The earlier botanists regarded all the various parts of plants as "organs" in relation to their supposed function; hence their description of plants was simply "organography." But instead of evolving schemes out of their own internal consciousness as to how plants ought to be constructed, later botanists endeavoured to discover by the study of development, and more particularly of embryogeny, how they actually are constructed, with the result that within a decade Hofmeister discovered the alternation of generations in the higher plants—a discovery which must

ever rank as one of the most brilliant triumphs of morphological research. With the knowledge thus acquired it became possible to determine the true relations of the various parts of the plant-body; to distinguish these parts as "members" rather than as "organs"—in a word, to establish homologies where hitherto only analogies had been traced—which is the essential difference between morphology and organography. The publication of the "Origin of Species" profoundly affected the progress of morphology, as of all branches of biographical research, but it did not alter its trend—it confirmed and extended it. We are not satisfied now with establishing homologies, but we go on to inquire into the origin and phylogeny of the members of the body.

ANATOMY AND PHYSIOLOGY.

Passing to the consideration of the progress of knowledge concerning the structure of plants, the most important result to be chronicled is the discovery that the plant-body consists of living substance indistinguishable from that of which the body of animals is composed. In respect of physiology we may well begin with the nutritive processes. At the close of the eighteenth century there was practically no coherent theory of nutrition. It is true that the important discovery had been made that green plants exposed to light absorb carbon dioxide and evolve free oxygen, but this gaseous interchange had not been shown to be the expression of a nutritive process. At the opening of the nineteenth century (1804) this connection was established by De Saussure, in his classical *Récherches Chimiques*, who demonstrated that, whilst absorbing carbon dioxide and evolving oxygen, green plants gain in dry weight; and he further contributed to the elucidation of the problem of nutrition by showing that, whilst assimilating carbon dioxide, green plants also assimilate the hydrogen and oxygen of water. Three questions naturally arose in connection with De Saussure's statement of the case—What is the nature of the organic substance formed? What is the function of the chlorophyll? What is the part played by light? It was far on in the century before answers were forthcoming. With regard to the first of these questions the researches of Boussingault (1864) and others established the fact that the volume of carbon dioxide absorbed and that of oxygen evolved in connexion with the process are approximately equal. The first step towards the solution of the questions with regard to chlorophyll and to light was the investigation of the relative activity of light of different colours, originally undertaken by Sénéquier (1782) and subsequently repeated by Daubeny (1836). It was not until 1871-72 that Lommel and N. J. C. Müller pointed out that the rays of the spectrum which are most completely absorbed by chlorophyll are just those which are most efficient in the assimilation of carbon dioxide. Subsequent researches have placed it beyond doubt that the importance of light in the assimilatory process is that it is the form of kinetic energy necessary to effect the chemical changes, and that the function of chlorophyll is to serve as the means of absorbing this energy and of making it available for the plant. The function of transpiration and of the means by which water and substances in solution are distributed in the plant is perhaps the department of physiology in which progress during the 19th century has been least marked. We have got rid, it is true, of the old idea of an ascending crude sap, and of a descending elaborated sap, but there have been no fundamental discoveries. With regard to transpiration itself, we know more of the detail of the process, but that is all that can be said, and we must regretfully confess that yet another century has closed without bringing the solution of the secular problem of the ascent of the sap. The 19th century has been, fortunately, rather more fertile in discovery concerning the movements and irritability of plants. But it is surprising how much knowledge on these points had been accumulated by its beginning. What was lacking was an interpretation of them, and whilst it has largely added to the store, its most important work has been done in the direction of explanation. Finally, of that department of physiological study known as the bionomics or ecology of plants, we may say that in the earlier part of the century it was studied more especially with regard to the distribution of plants, and to their relation to soil and climate, but that since the publication of the *Origin of Species*, the purview has been greatly extended, since it then became necessary to study the relation of plants, not only to inorganic conditions, but to each other and to animals; in a word, to study all the adaptations of the plant with reference to the struggle for existence. The result has been the accumulation of a vast amount of most interesting information.

At the end of the address, Prof. Bayley Balfour expressed regret at the absence of Prof. Vines, whose acceptance of the presidency of the section had been hailed by botanists with immense satisfaction. In moving a vote of thanks to Prof. Vines for his address, he suggested that a message of sympathy and regret be sent to the absent president.

Prof. Marshall Ward seconded the motion, and re-echoed the regrets which were so generally expressed at the absence of Prof. Vines.

Prof. Bower, who described himself as probably the senior pupil of Prof. Vines present; Prof. Hartog, and Prof. Green having also spoken, the motion was carried.

MISCELLANEOUS SUBJECTS.

Mr. Albert Wilson read a paper on "The Great Smoke-Cloud of the North of England and its influence on Plants."

Prof. F. E. Weiss gave an account of a Gymnosporangium, recently observed in North Central China.

In the afternoon, Mr. Harold Wager gave a demonstration

of the structure and attachment of the flagellum in *Engelm. viridis*; Mr. T. W. Woodhead read a paper on "The Structure of the Root-nodes of *Alnus glutinosa*"; and Mr. J. Parkin read a paper on "Fungi Found in Ceylon Growing upon Scale-Insects."

[We are indebted to *The Times* of various dates for the above extracts. Ed.]

Mr. Samuel Margerison read a paper on BRITISH SYLVICULTURE.

The old, insular idea that there is no timber on earth equal to British Oak, has had to be considerably modified since the introduction of foreign timbers in large quantities. Among the hundreds of imported varieties it only needs one to mention, say, Teak, Greenheart, Pitch Pine, and Fir, to show that our own supplies would long ago have proved inadequate to the demand both in quantity and quality, had we been solely dependent on home production. Yet we cannot afford to ignore the fact that we still need large quantities of native wood. Notwithstanding the substitution to a large extent of iron for wood in construction, more timber is used than ever, and in the opinion of experts, the available supply of the latter is so much reduced that we are "within measurable distance" of a timber famine. Doubtless, the world has immense areas of almost untouched forests, but the present cost of transport is prohibitive of their use here, and, besides, the requirements of other countries are increasing, and much of this supply will be wanted at home. In view of these vital facts, it is short-sighted and imprudent of us to neglect our own sources of supply. Could we look into the future for the period covered by the life of a mature tree, we should probably see even greater economic changes than have taken place during a similar period of the past. Of course, something is being done by a few people to provide for future requirements, but it is a trifle in comparison with what ought to be done. Not hundreds of acres, but hundred of thousands ought to be planted. We have much land, both in hilly and lowland districts, which is at present wholly or partially unproductive, a great part of which could be profitably utilised for silviculture, and it behoves us to use some of it in this way. There is enough of it to make us nearly independent of foreign supplies of the most generally used timbers, which we import to the value of nearly £20,000,000 per annum.

The nation, as a whole, is comfortably apathetic about the matter—content with its present abundant supply. Owners of the soil are generally scared by the personal loss which they might suffer, because of the length of time it takes to bring back profitable returns; and they are also influenced by the possibility of loss of sporting facilities. This attitude is not surprising, but there seems to be no ground for expecting in the matter of sport anything but a change of kind; as in the case of reclaiming—say, fen-land, where water-fowling is exchanged for partridge-shooting. Field sport would give way for woodland sport. There might be fewer partridge and grouse, but there would be more pheasants and foxes, and perhaps deer.

Another parallel may be drawn here. An immense area of land has been improved and made more productive in this country by means of the Government loans for drainage of agricultural land; and it seems to many that, as this question of the supply of timber is even more a national than a personal one, it may be taken up by a Government department in such a manner that private owners would be secured against loss, whilst the nation would ultimately benefit largely. It may also be incidentally mentioned that the cultivation of a large area of forest would be another means of keeping the labourers from crowding into the large towns as they are doing.

CONTINENTAL FORESTRY.

When we compare the results obtained from the forests of the continent (especially the forests of Germany) with those of our own country, we cannot fail to see that some change is necessary. We find in Germany, for instance, Beech forests with 9,000 cubic feet, and Fir with 12,000 to 15,000 cubic feet to the acre. Contrast these with our crops of 2,000 to 3,000 cubic feet, and it is evident that something is lacking either in the conditions or management of our woodlands. There is no serious difference in the natural conditions; climate and soil are similar, but the management in Germany is much more systematic and thorough.

What are the differences in management? In a few words, the German forester plants thickly to induce lengthy, straight, and clean growth; he preserves a good overhead canopy to modify direct evaporation from the soil; and later, thins gradually to encourage thickness of stem. He has systematic "rotations" of a certain number of years for cutting, according to the nature of the crop, its environment, and rate of growth. Sport is secondary to silviculture, although sport is abundant; and, where advisable, he has the advantage of secured Government loans at reasonable interest, together with what is perhaps the most important thing of all, Government supervision. There are also large areas of forest belonging to the state and to other corporations. Schools of forestry, with equipments worthy of the importance of their object, are also provided in order to give scientific and practical training to those who have charge of the forests. And the result of this care is that crops of three or four times the bulk of ours are gained from the timbered areas.

REFORMS NEEDED IN BRITISH FORESTRY.

Without presuming to formulate any complete scheme of reform, I may perhaps quote some of the general suggestions that have been made, of the lines on which improvements might be made, both in using to better advantage our present timbered lands, and in planting waste and poor soils. The necessary powers having been given or extended, a Forestry

Department might be created, either distinct from or as a branch of the Department of Agriculture. Owners of land, either private persons or corporations who possess lands unsuitable for growing field crops—say land worth no more than 10s. per acre per annum—might ask for Government loans at low interest, with repayment spread over a long term of years. Expert inspectors would examine the soil, climate, and general environment of the land, and report on its suitability for timber-growing and the probable disposal of the produce, would formulate a "working plan" for the development and working of the area for a term of years equal to the life of the particular species to be planted. This "working plan" would have to be strictly adhered to, unless the express sanction of the Department were obtained to some alteration owing to changed circumstances or discovery of mis-judgment. The Department itself might have power to purchase and develop forest areas, and at, say four or six, centres might institute forestry schools for the training of forest officers.

In the sylviculture proper, the greatest gain would come from the systematic methods of growing timber, the crops not being subject, as they are at present, to being wasted in consequence of the caprice or necessity of individuals. The great principles would be thoroughly worked out of making sport secondary to timber-growing (most especially by keeping down rabbits, and by not allowing the convenience of King Pheasant to interfere with the proper working of the woods); thick planting, preservation of over-head canopy, judicious thinning, and the suppression of the host of forest enemies, insect, vegetable, and other. In a few years current expenses would be met by the sale of the early thinnings, and sporting rents, and the late crops would be utilised by the repayment of the loans, meeting death duties, &c.

In the foregoing remarks I have said little, perhaps, which has not been said before, and more fully; but it is an important matter that we should more generally realise the danger there is of a shortage of supply of timber, and at the same time see that we can easily provide for ourselves to a very great extent upon very simple lines.

FACILITIES OF TRANSPORT.

I should like to add a few words on a section of the subject which naturally suggests itself to one who is engaged in the commercial work of home forestry, a detail which does not generally receive the attention of scientists and producers so much as it ought to do. Having produced a stock of timber, it is necessary to place it where it is useful, and so the questions of handling, transport, and conversion come in. The cost of these operations is, proportionately to the value of a forest, very great, often much greater than the cost of production. As I hinted in reference to the large forest areas of other countries, the question of handling and transport is a vital one. It is no less so in relation to native timber. In fact, under present circumstances (circumstances which might be modified), it has almost more important influence, proportionately, on home productions than it has on foreign. The cost of conversion is also greater. The continental forester and timber merchant have larger quantities of stock in one district to work on, so that there are less frequent removals of the appliances for conversion. He has less costly labour. He can do much of the work of conversion on the ground where the trees are grown. Often he has the advantage of water carriage, and his railway carriage is much more economically done. When his produce arrives in this country also, it is conveyed from the port to the consumer for very much less than our native timber is carried. Preferential railway rates here are equal to an annual tax on our woodlands of some shillings per acre. But much of this could be remedied.

By the systematic working of larger areas in districts suitable to sylviculture, local industries would arise, and instead of, as at present, having to bring bulky and perhaps somewhat dangerous traffic by rail to the converting machinery in the towns, and then conveying it out again to the users, we should have compact and safe loads of converted or semi-converted timber, which could be taken to the ultimate consumer straight from the growing spot, and thus save the cost of one haulage, and that the most cumbersome, and consequently the most costly one. I venture to think that if the railway companies could have guaranteed to them large quantities of timber which could be compactly loaded, the pressure of public opinion would cause them to give facilities for the traffic, equal to those at present extended to foreign goods.

SUMMARY.

These then seem to me to be the essential objects to be striven for, if our home forestry is to be made equal to the future requirements of the country:—

First, the largest possible crops to be grown from a given area by improved sylviculture, and large areas of cheap land devoted, to a considerable extent, to the production of timber, so as to centralise effort. Secondly, conversion or partial conversion of the rough timber on the spot by means of machinery, assisted by light railways, timber slides, wire railways, water shoots, timber waggons (which after all will almost "go anywhere and do anything"), for local transport. Thirdly, the cheapening of transport to the more distant markets by railway rates more on an equality with those for imported timber. Fourthly, Government assistance, and supervision, in order to secure continuity of policy.

With these reforms, I venture to think that in the event of foreign supplies of timber being curtailed by any means, we shall be able to supply ourselves with most of what we require. [This paper was kindly forwarded to us by Mr. Margerison. Ed.]

An interesting discussion by Prof. Balfour (Edinburgh), Prof. Marshall Ward (Cambs.), Mr. T. H. Healey, &c., ensued on the reading of the paper.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 11.—There was a glorious show of flowers at the fortnightly meeting of the Committees of this Society held at the Drill Hall, Westminster, on Tuesday last. It is seldom the Society's Gold Medal is awarded for a collection of cut flowers, but such an exhibit of *Gladiolus* was staged by Messrs. J. BURRELL & Co., Cambridge, that for cultural excellence and general merit has never been surpassed, and the highest award possible was recommended it. As there were several smaller collections of *Gladiolus*, this showy hardy flower was very conspicuous in the Hall; and two Awards of Merit were recommended by the FLORAL COMMITTEE to varieties shown by Messrs. BURRELL.

But even more remarkable than the *Gladiolus*, which are just now in perfection, were the beautiful exhibits of decorative *Roses*. There were seven collections from as many firms, all well known *Rose* cultivators, and the quality and variety of the blooms shown were the subject of frequent remark. It is a question if there were not as many decorative *Roses* at the Drill Hall as there were shown at the National *Rose* Society's exhibition at the Crystal Palace, but some varieties that were shown there cannot be had in bloom in September, although there appeared to be almost every variety of form and colour. The *Dahlias* also were very remarkable, and the firm of J. BURRELL & Co. again obtained distinction in respect to these. A collection of about eighteen new *Cactus* varieties shown by them was of unsurpassed merit, and almost all of those varieties that had not previously been given awards were recommended for distinction on this occasion. Mr. J. STREDWICK and Mr. C. TURNER, Royal Nurseries, Slough, also showed seedling *Dahlias* that were given awards.

The FRUIT and VEGETABLE COMMITTEE, although it sat for very much less time than the FLORAL COMMITTEE, had also more work to do than usual, there being an uncommon number of exhibits. This body recommended a First-class Certificate to Cannell's Defiance Cabbage, shown by Messrs. CANNELL & SONS, Swanley; an Award of Merit to Early Prolific Fibbert, from Messrs. BUNYARD & Co.; an Award of Merit to a seedling Apple St. Everard, from Papworth Hall Gardens; four Awards of Merit to varieties of Potatoes that have been cultivated at Chiswick; and fourteen varieties of Tomatoes also cultivated out-of-doors at Chiswick were highly commended.

Owing to unavoidable circumstances, the LECTURE on "Garden Manures" that had been announced for this date was postponed.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. Chas. T. Drury, Geo. Nicholson, H. B. May, R. Dean, W. Howe, J. Hudson, J. Jennings, R. Fife, C. R. Fielder, J. D. Pawle, Chas. E. Pearson, Jas. Walker, H. J. Cutbush, H. J. Jones, E. H. Jenkins, J. W. Barr, W. J. James, Chas. Blick, and E. T. Cook.

ROSES.

Mr. CHAS. TURNER, Royal Nurseries, Slough, showed upwards of two dozen bunches of garden or decorative varieties, and these "bunch sprays" were exceedingly showy, being well put together, and including good blooms. Some of the more noticeable were Anna Olivier, cream coloured, with salmon-pink centre; Miss E. Gifford, white; Souvenir de Therèse Levet, crimson; Kaiserin Augusta Victoria, lemon colour; W. A. Richardson, Souvenir de Guillot, Perle des Jardins, &c. (Silver-gilt Banksian Medal).

Messrs. GEO. COOLING & SONS, Bath, had a great number of varieties of garden *Roses*, put up in bunches. Such an exhibit showed how extremely valuable these *Roses* are, affording, as they do, the earliest flowers each season, and blooming as late as the absence of frost will allow them. The exhibit contained a large number of the best Tea and Noisette varieties, as Medea, Bridesmaid, Innocente Pirola, Madame Hoste, Miss E. Brownlow, Maman Cochet, Maréchal Niel, Madame Lambert, Madame Falcot, Homer, &c. The more truly garden varieties, including the pretty China section, were also well represented (Silver Flora Medal).

An excellent display of Tea and other *Roses* was made by Mr. GEO. PRINCE, Oxford, who maintains that if *Roses* be grown upon the cultivated seedling Briar they will bloom earlier and later than otherwise. The quality of the blooms shown was extremely good, and there was a large number of varieties. Some of the more noticeable were Maman Cochet, White Maman Cochet, Ernest Metz, Princess of Wales, Marie Van Houtte, Niphetos, Madame Falcot, Mrs. E. Mawley, Perle des Jardins, Bridesmaid, Comtesse de Nadaillac, and a number of the choicest climbing varieties (Silver-gilt Banksian Medal).

Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, showed a few varieties of decorative *Roses*, all of which have been raised by Messrs. PAUL. Corallina, a decorative Tea variety, with very beautiful reddish-rose flowers, was splendidly shown in large baskets; it is evidently a capital grower. Queen Mab, a pink variety of the China section; Fairy Queen, a decorative Tea of pale cream colour; Enchantress, creamy-white; and several seedlings, are all good

Roses. We ought to mention sulphurea, a decorative Tea *Rose* with yellow semi-double flowers, and extremely high coloured foliage. The contrast is very effective (Silver Banksian Medal).

Messrs. FRANK CANT & Co., Baiswick Nurseries, Colchester, made a pretty display with his *Roses*, showing sixty-eight varieties, and not including more than eight that could not be shown as true garden varieties. Conspicuous in the collection was the old China Fabier, a single crimson flower with white centre; Marquis of Salisbury, L'Idéal, Marie Van Houtte, Papa Gontier, one of the freest bloomers of all; Madame P. Ducher, cream colour, with semi-double flowers, &c. (Silver Banksian Medal).

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, had a grand lot of *Roses*, in which such varieties as Grussan Teplitz, crimson; Clara Watson, flesh colour; Souvenir de P. Carnot, white, shaded pink; Anna Olivier, Marie Van Houtte, Allister, Stella Gray, Madame P. Ducher, L'Idéal, and others, were most noticeable (Bronze Flora Medal).

Mr G. W. PIPER, Uckfield, Sussex, had also a collection of *Rose* blooms, and showed a considerable number of varieties: Tea Maman Cochet, Sunrise, and White Maman Cochet, were exhibited in quantity upon Bamboo stands, and were very effective; the blooms being of very superior quality.

GLADIOLUS.

There was a glorious exhibit of *Gladiolus* from Messrs. J. BURRELL & Co., Howe House Nurseries, Cambridge, whose collection was not only a large one, but it exhibited such perfect culture as is very seldom obtained. The flowers were all large, brightly coloured and even, and the distinguished award of a gold medal was well deserved. Many of the spikes had twelve open blooms upon them, and we could count ten or more buds above these. There were some excellent varieties amongst the general collection, but we must confine our remarks to a few new seedlings shown. Of these Dorah Craven and Vida were white varieties marked with purple in the throat, both somewhat similar, and very handsome. Rosalind was a very large flower of a silvery colour and red, and two other magnificent varieties will be found mentioned under "Awards" (Gold Medal).

Varities of *Gladiolus Nanceianus* were shown by Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, and they were remarkable for the size and beautiful markings of the flowers. We noticed General Saussier, deep red or plum colour, with pretty cream markings in throat; President Carnot, a fascinating flower with red, purple and cream shades of colour; and Vivand Morel, a very large flower of salmon-scarlet, marked irregularly with purple.

DAHLIAS.

Messrs. J. BURRELL & Co., Cambridge, exhibited some extraordinary seedling varieties, most of which will be found described under "Awards."

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, made a delightful display of blooms, showing three dozen show *Dahlias* in variety, twenty-four bunches of single flowered varieties, twenty-four bunches of *Cactus Dahlias*, twenty-four bunches of Pompon varieties, and twelve bunches of the so-called *Cactus* single varieties, which had a very distinct and agreeable effect. Messrs. CHEAL also showed a few seedling varieties, including Golden Queen (*Cactus*), Cheal's White (*Cactus*), Lord Alverstone (scarlet and purple *Cactus*), and Miss Girdlestone, and Shamrock singles (Silver-gilt Banksian Medal).

Dahlias were also shown by Mr. STREDWICK and Mr. C. TURNER, Slough. See Awards.

OTHER HARDY FLOWERS.

Mr. THOS. S. WARE, Hale Farm Nurseries, Tottenham, had a delightful show of hardy flowers, in which the shrubby *Phloxes* constituted an imposing feature. These were represented by some excellent varieties, as Le Mahdi, rich purple; Coquelicot, very bright red; Independence, white; Giordini, mauve, with shading of silver colour; Aurore, Leonardo da Vinci, white, with rose-coloured eye, &c. Mr. WARE had also many showy *Dahlias*, perennial *Asters*, and many miscellaneous species (Bronze Flora Medal).

Mr. A. PERRY, Hardy Plant Farm, Winchmore Hill, London, N., made an extensive exhibit of hardy flowers, embracing a large number of good things. Some of these were *Lychnis cardinalis*, *Lychnis-Haageana*, *Stachys coccinea*, all brightly-coloured flowers, especially the L-Haageana; *Scabiosa caucasica*, some choice varieties of *Gaillardias*, and perennial *Asters*; *Senecio pulcher*, with large single, rosy-purple flowers; *Astrantia major* and *A. minor*, *Kniphofia MacOwani*, *Gentiana Andrewsii*, *Callioche involucreata*, an old species with magenta-coloured single flowers, having a white centre, &c. (Silver Flora Medal).

Messrs. DOBBIE & Co., Rothesay, N.B., and Orpington, Kent, showed excellent strains of French and African *Mari-golds*. Of the latter strain, Prince of Orange and Lemon Queen are distinct, and of great merit. *Antirrhinums* were also shown well by Messrs. DOBBIE, and they included the varieties Yellow Queen, White Queen, Firefly, white, crimson, and yellow; Crimson King, and Tall Striped, all of them being very good in their respective colours.

Messrs. BARR & SONS, Covent Garden, London, W.C., showed a collection of *Gladiolus* varieties, also some nice shrubby *Phloxes*, *Kniphofia corallina* superba, K. Pfitzeri, and others; also some of *Marlae's* hardy *Lilies*; *Helianthus rigidus*, with semi double flowers; some varieties of *Dahlias*, *Montbretias*, perennial *Asters*, *Scabiosa caucasica*, &c. (Silver Banksian Medal).

Messrs. JOHN PERD & SONS, Roupell Park Nurseries, Norwood Road, London, a group of hardy flowers, in which *Dahlias* were the principal feature.

MISCELLANEOUS.

Messrs. H. CANNELL & SONS, Swanley, Kent, showed a grand group of *Cannas* in bloom that was well worthy the Silver Gilt Flora Medal awarded it. It was composed of about forty varieties, including Madame Pichon, Jean Tissot, scarlet; Madame Crozy, scarlet, with a fine yellow margin; Robert Christy, cherry-red; Burbank, a yellow variety (America); Meteor, Italia, Emile Lorenz, and a number of others, all of them very handsome and useful, for Messrs. CANNELL exhibit them in bloom throughout the year. The group was bordered by some excellent dwarf Cockscombs in pots.

Mr. J. H. WITTY, Nunhead Cemetery, London, S.E., showed a group of early flowering *Chrysanthemums* in pots, which, from a cultural point of view, were most commendable, the flowers being large, well developed, and the plants of vigorous appearance (Silver Flora Medal).

Messrs. W. PAUL & SON exhibited a fine group of plants of *Salvia Ruhm* von Stuttgart, which is described as an improved form of *S. splendens*, but which is probably identical with *S. s. grandiflora* (Silver Banksian Medal).

Mr. H. J. JONES, Ryecroft Nurseries, Hither Green, Lewisham, had a group of miscellaneous species of plants including the winter-flowering *Begonia Dreggi*, a small delicate-leaved *Begonia*, with white blossoms. Also *Richardsiana*, a white flowered variety of rather freer growth, and with more deeply cut leaves; Moonlight, also a white flowering variety; and *Gloire de Lorraine*. Also several varieties of *Heliotropes*, one of which obtained an Award of Merit (Silver Banksian Medal).

Messrs. HARRISON & SONS, Leicester, showed an extensive collection of Sweet Peas, which included some of the very choicest varieties, and they were shown in tastefully arranged bunches (Bronze Flora Medal).

Messrs. W. & J. BROWN, of Peterborough, also showed a good collection of Sweet Peas, and it should be remembered that the present date in September is a very late one for these flowers (Silver Banksian Medal).

Mr. CHAS. TURNER, Royal Nurseries, Slough; and Messrs. PAUL & SON, Cheshunt, showed sprays of varieties of *Hibiscus syriacus* (*Althaea frutex*), some with single and others with double flowers.

Messrs. JAS. VEITCH & SONS exhibited three plants in pots of *Lilium Browni*, var. *leucochilum*, a yellow flowered variety of this handsome Lily.

Awards.

Anemone japonica Mont Rose.—This is a beautiful variety of this popular autumn-flowering *Anemone*. The blooms which, as shown, were $3\frac{1}{2}$ inches across, are pale mauve colour. From Messrs. W. PAUL & SON, Waltham Cross (Award of Merit).

Anthurium Bakeri.—A species introduced from Costa Rica in 1872. It has rather insignificant, green, reflexed spathe, and pink and bright scarlet spadix. The plant exhibited by Messrs. JAMES VEITCH & SONS, Royal Exotic Nursery, Chelsea, bore three spadices thickly set with small coral-coloured flowers and pea-shaped fruits, which later would become bright scarlet. The leaves are linear, leathery, about 14 inches long, and the petioles about 6 inches long. In the leaves the midrib is very prominent (Botanical Certificate).

Dahlia Arvus (Cactus).—A light orange-red-coloured variety of excellent form and size. From Messrs. J. BURRELL & CO. (Award of Merit).

Dahlia Lyric (Cactus).—Bright crimson, with yellow bases to the petals. Capital form. From Messrs. J. BURRELL & CO. (Award of Merit).

Dahlia Dinorah (Cactus).—A pale red variety, with orange shade. Very fine flowers. From Messrs. J. BURRELL & CO. (Award of Merit).

Dahlia Eclipse.—A greenish-yellow-coloured Cactus with narrow petals, very refined flower of quite star-like appearance. From Mr. J. STREDWICK (Award of Merit).

Dahlia Imperator.—A fine rosy-crimson Cactus *Dahlia* of large size and beautiful form. From Messrs. J. BURRELL & CO. (Award of Merit).

Dahlia Rosine (Cactus).—A very rich and deep mauve-coloured variety of surpassing merit. From Messrs. J. BURRELL & CO. (Award of Merit).

Dahlia Jentoucy.—A pretty yellow Cactus variety, with less narrow petals, and scarcely so refined a flower as *Eclipse*, but described as a capital grower and bloomer. From Mr. J. STREDWICK (Award of Merit).

Dahlia J. W. Wilkinson (Cactus).—A large crimson-flowered variety with purple shading especially towards the points of the petals. From Messrs. J. BURRELL & CO. (Award of Merit).

Dahlia Galliard (Cactus).—A magnificently bright, large-flowered variety, almost scarlet. From Messrs. J. BURRELL & CO. (Award of Merit).

Dahlia Sybil (Pompon).—Yellow, with reddish margin. A neat little flower. From Mr. C. TURNER, Slough (Award of Merit).

Dahlia Galatea (Pompon).—A deep maroon coloured variety, of good form. From Mr. C. TURNER (Award of Merit).

Dahlia Festa (Cactus).—A rosy-pink variety, with lighter centre. Excellent in every respect. From Messrs. J. BURRELL & CO. (Award of Merit).

Dahlia Zerlina (Pompon).—Flowers exceedingly deep-crimson or maroon colour, small in size, and neat in form. From Mr. C. TURNER (Award of Merit).

Gladiolus Althaea.—A very large variety of much substance, one of the spikes bearing twelve expanded flowers; colour rich pink, splashed with red and purple, and deeply blotched with purple on the lower petals. From Messrs. J. BURRELL & CO. (Award of Merit).

Gladiolus delicata.—A magnificent variety of pale pink colour, most imposing in size. There were numerous buds showing above the eight expanded flowers the spike bore. From Messrs. J. BURRELL & CO. (Award of Merit).

Heliotrope Dr. Jeelin.—A deeply-coloured variety, somewhat distinct shade, and of strong habit. From Mr. H. J. JONES, Ryecroft Nursery, Lewisham (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), J. G. Fowler, De B. Crawshaw, J. G. O'Brien, W. Cobb, H. J. Chapman, F. J. Thorne, W. H. Young, H. A. Tracy, and A. Hay.

As on the last occasion of the Committee meeting, Orchids were not present in any large number, and the only groups were staged by Messrs. F. SANDER & CO., St. Albans, and consisted of *Dendrobium*, *Phalenopsis*, *Schroderianum*; and that of W. C. WALKER, Esq., Percy Lodge, Winchmore Hill (gr., Mr. Geo. Cragg), which consisted of some sixty spikes of flowers, and some in bud.

ARTHUR HAY, Esq., Oakley Park, Eye, Suffolk (gr., Mr. H. Pratt), exhibited a finely grown plant of one of the most beautiful varieties of *Vanda coerulea* yet seen, the flowers being large, circular, and netted and tinged with bright blue, the veining and lip being of a violet tint. The plant possessed a single stem clad with about two dozen leaves, and bore a fine inflorescence of seventeen fully expanded flowers on one spike (Cultural Commendation).

Captain HOLFORD, Westonbirt, Tetbury (gr., Mr. A. Chapman), sent an interesting spike of a good variety of *Cattleya aurea*, bearing three dissimilar flowers. The one had the purple lip closely veined with rich yellow veining except the margin, and with no sign of the patches of yellow colour often seen in flowers of this plant; the second had yellow disc; and the third a darker yellow middle area, partially obliterating the yellow veining.

NORMAN C. COOKSON, Esq., Oakwood, Wylam, Northumberland (gr., Mr. Wm. Murray), sent an inflorescence of the fine *Cypripedium* \times *Morgania*, "Oakwood" variety, and another of an unrecorded seedling, probably derived from *C. Boxalli* \times *C. Leeannum*.

DE B. CHAWSHAW, Esq., Rosefield, Sevenoaks (gr., Mr. S. Cooke), showed two very interesting hybrid *Odontoglossums*, the one, *O. v. Wattianum* *Crawshayanum* (*Lindleyanum* \times *Harryanum* δ), proving the supposed record of the imported type. The sepals and petals were yellow, closely blotched and marked with brown, the column and base of the lip jutting out as in *O. Lindleyanum*, the broad blade of the lip white, with one large violet-purple blotch and some smaller ones around the side. The other was *O. v. Hallii* *crispum* *rooseum* (*Hallii* δ *crispum* *rooseum* δ). The flowers differed from the last shown in having the reverse of the flower coloured rose, the colour showing through on the tips of the sepals. Flowers cream-white, with light brown markings. Lip fringed, and apiculate.

R. I. MEASURES, Esq., Cambridge Lodge, Camberwell (gr., Mr. H. J. Chapman), showed *Cypripedium* "Mrs. F. L. Amis" (tonsum \times *Fairleanum*), with singular looking pale yellowish flower, the upper sepal marked with dark green lines, with a rosy flush near the margin, the petals also having a rosy tint and some purple spots. Also *C. v. "Unxia"* (*Harrisianum* superbum \times *Lawreli*), a showy hybrid of the general appearance of *C. v. Harrisianum*, but having a warm purplish glow over the flower.

F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, showed the pretty *Aganisia ionoptera*, with wax-like white flowers, tinged with blue, and striped with purple; and the singular *Bulbophyllum Reinwardti*, brown, with claret-coloured lip.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. Jas. Hudson), sent a specimen of *Dendrobium formosum* giganteum, with several home-raised seedlings in flowering stage around it, and one in flower. The original plant was imported in 1897, and from seed which came with it among the roots, the plants surrounding it germinated, and are now flowering (Cultural Commendation).

Mr. ED. KROMER, Bandon Hill, West Croydon, showed *Zygopetalum crinitum*.

Major JOYCE, Sunningdale Park (gr., Mr. F. J. Thorne) showed a fine plant with three spikes of the singular plant imported by Messrs. JAS. VEITCH & SONS, and named *Dendrobium taurinum amboinense*. The flowers differ much from the type, especially in colour, as they are entirely yellow, faced with brown, of varying shades. The same exhibitor also showed a spike of a very richly-coloured *Pescatorea* (*Zygopetalum*) *Klabochorum*, with two flowers on the same stem, a circumstance perhaps not previously seen.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr., Mr. J. Davis), showed a very large and finely-grown specimen of *Cattleya bicolor* "Glebelands" variety, with eleven spikes of finely-developed flowers. The broad, rose-purple labellums had a white margin, which, together with the size of the flower, formed a distinguishing feature (Award of Merit).

Fruit and Vegetable Committee.

Present: Philip Crowley, Esq., Chairman; and Messrs. H. Somers Rivers, James H. Veitch, Jos. Cheal, Geo. Kelf, H. Eslings, W. Pope, A. Dean, S. Mortimer, C. Herrin, John Basham, E. Beckett, F. Q. Lane, Jas. Smith, Geo. Reynolds, G. Norman, and George Bunyard.

Messrs. J. VEITCH & SONS, Ltd., The Royal Exotic Nursery, King's Road, Chelsea, showed two pyramids of the John Downie Crab, most abundantly fruited. The trees had been removed from the open ground and potted.

The same firm had an interesting show of hardy fruits on a table backed with Crabs, and *Rubus laciniatus*, grandly fruited, and trained on flat trellises. Their show of Plums was particularly good, and included large dishes of the dark

purple Archduke, Boulouf, Reine Claude du Comte Hathems, Prince Englebert, Monarch, Goliath, and Grand Duke; the red Cox's Emperor, Pond's Seedling, Victoria, and Jodoigne Gage. Light coloured varieties: the Transparent Gage, Cox's Golden Drop, Washington, Jefferson, White Magnum Bonum. John Seden, raised from the Farleigh Damson and Black Orleans Plum, was shown as picked fruit and on the branch. It is a fruit of large size for a Damson, carries a fine bloom, and is a heavy bearer. The fruit is bigger than the Farleigh, and is less astrigent than are Damsons generally. The firm showed a small collection of early varieties of Pears and Apples, including Pear Gregoire Bordillon, a fruit of the shape of Williams' Bon Chrétien; and Triomphe de Vienne. A dish of very fine Apples The Queen, and one of the delicious Summer Golden Pippin (Silver Knightian Medal).

River's Early Damson, a fine-looking variety, was shown by Messrs. RIVERS & SONS, Sawbridgeworth.

Messrs. HARRISON & SONS, seed-growers, Leicester, received a Vote of Thanks for an exhibit of Runner and Dwarf Kidney Beans, twenty-four varieties being shown. Several varieties not much grown were amongst them, viz., Dwarf Magnum Bonum, Early Dwarf, Victoria Flageolet, Best-of-All, and Neal's Dwarf (Vote of Thanks).

Mrs. BURNS, North Myms Park, Hatfield (gr., Mr. C. R. Fielder), received a Silver Banksian Medal for a collection of eighteen varieties of Plums, all of them possessing beautiful bloom. We remarked fruits of Diamond (from a standard tree), Brahy's Green Gage, Transparent Gage, Archduke, Guthrie's Golden Gage, and Cox's Emperor.

Messrs. PAUL & SONS, Old Nurseries, Cheshunt, showed a number of plants of the perpetual-fruited Strawberry, St. Joseph. The free manner in which these were fruiting was acknowledged by the award of a Cultural Commendation.

From the Society's Gardens at Chiswick, Mr. S. T. WRIGHT, the Superintendent, exhibited Tomato plants cut off at the ground-level, of fourteen varieties which have been cultivated out-of-doors at Chiswick this season. All of the plants were well cropped, although most of the fruits were yet unripe, and the committee attached to each variety "Highly Recommended." The names of these varieties may be found recorded on p. 197 in our number for last week.

A collection of Damsons and Bullaces, consisting of the leading varieties, came from Mr. J. WATKINS, Withington, Hereford. Some six fruits of Melon Early Favourite were sent by Mr. H. BALDERSON, Corner Hall, Hemel Hempstead; and a dish each of Moor Park and Mirabelle Plums by Mr. H. DIVERS, gr., Belvoir Castle.

Awards.

Apple St. Everard.—A moderate sized dessert variety, with open, very shallow eye, and stout stalk. Colour, deep red upon one side, with white spots. From Mr. CHARLES TERRY, Papworth Hall Gardens, Papworth (Award of Merit).

Cabbage Cannell's Defiance.—This is a capital Cabbage, possessing most useful characteristics. It has handsome solid, conical, green heads, of moderate size only, but of perfect form. Messrs. CANNELL exhibited a large number of perfect-looking heads. It is recommended as essentially an all-the-year-round variety, and very fine heads are obtained by sowing seeds in April (First-class Certificate).

Filbert Early Prolific.—This is a free-cropping variety of the Filbert, producing very large clusters, and the husks are peculiarly frilled. It has an advantage over other varieties, in that the fruits ripen at least a fortnight earlier. From Messrs. G. BUNYARD & CO., Maidstone (Award of Merit).

Potatoes Sir J. Llewellyn, Centenary, Supreme, and Baden Powell.—From the Royal Horticultural Society's Gardens at Chiswick (Awards of Merit). Descriptions of these Potatoes may be found on p. 197 in our issue for last week.

NATIONAL DAHLIA.

SEPTEMBER 7, 8.—While there is ample space at the Crystal Palace for such an exhibition as that of the National Dahlia Society, with abundance of light to enable the flowers to be seen to the best advantage, yet it must be admitted that the vastness of the building appears to dwarf the Dahlias out of all proportion. The nakedness of the tables on which the flowers are staged is so objectionable, showing beneath them empty boxes, rejected blooms, band-boxes, and other paraphernalia of the exhibitors, with here and there a show-box standing out from beneath the table at a dangerous angle; that the wonder is, the committee of the Society do not insist upon their being draped. The entries were said to be more numerous than ever, still there were great lengths of bare tabling, probably because some of those who had entered, failed to put in an appearance.

SHOW AND FANCY DAHLIAS.

The present may be said to be Mr. JOHN WALKER's year, for at the Crystal Palace, as well as several of the provincial towns where Dahlias are exhibited, Mr. WALKER has taken the leading prizes. At Sydenham, he was 1st with sixty blooms, and though some of the flowers showed a tendency to coarseness which comes of an awkward season, there were yet not a few blooms of approved quality, and they were Florence Tranter, Rev. J. B. M. Camm, John Walker, Victor, Mrs. Foreman, Dr. Keynes, Mr. Every, T. J. Saltmarsh, (Colonist), Prince Henry, Mrs. Gladstone, Comedian, Wm. Rawlings, R. T. Rawlings, William Powell, Perfection, John Forbes, Queen of the Belgians, Matthew Campbell, Geo. Rawlings, Kathleen, John Bennett, Dorothy, Royal Queen, Mrs. J. Greaves, J. C. Vaughan, Goldsmith, John Standish,

Herbert Turner, Virginala, Duke of Fife, Mabel, Chorister, and Muriel Hobbs. Mr. S. MORTIMER, Swiss Nursery, Farnham, was 2nd, his leading blooms were Thomas Goodwin, Virginala, J. B. Service, Wm. Powell, T. J. Saltmarsh, Mrs. S. Walker, a pleasing light variety; R. T. Rawlings, J. N. Keynes, Mrs. Gladstone, and John Walker. Mr. M. V. SEALE, Nurseryman, Sevenoaks, was 3rd.

There were four entries in the class for forty-eight blooms, instead of only three as in the previous class; and here again Mr. JOHN WALKER was placed 1st, with Miss Cannell, John Hickling, William Powell, Duke of Fife, Mabel Stanton, Ethel Britton, J. T. West, Rev. J. B. M. Camm, Maud Fellowes, Mrs. J. Grieve, Mrs. Foreman, Flag of Truce, Arthur Rawlings, Frank Pearce, Nubian, Virginala, Diadem, Chieftain, Muriel Hobbs, Matthew Campbell, J. C. Vaughan, Mrs. Gladstone, R. T. Rawlings, Comedienne, &c. Mr. S. MORTIMER was again 2nd, his chief blooms were Diadem, John Standish, Henry Walton, and Richard Dean; 3rd, Messrs. KEYNES, WILLIAMS & Co., Salisbury.

With thirty-six blooms, Mr. GEO. HUMPHRIES, Kingston Langley, Chippenham, was 1st, and he had as his best blooms, T. J. Saltmarsh, Duke of Fife, Ethel Britton, Maud Fellowes, Prince of Denmark, R. T. Rawlings, Mrs. Gladstone, William Rawlings, Florence Tranter, John Walker, Sailor Prince, Shottesham Hero, David Johnson, Harry Turner, Duchess of York, Miss Cannell, and Dorothy; 2nd, Mr. W. TRESEDER, nurseryman, Cardiff.

With twenty-four varieties, Messrs. J. CRAY & SON, Nurserymen, Frome, were 1st; they had in good form Emin Fasha, John Walker, Matthew Campbell, W. Powell, Florence Tranter, Willie Garratt, Prince of Denmark, Dr. Keynes, Mrs. Every, R. T. Rawlings, Duchess of York, W. Rawlings, Colonel, Rev. J. B. M. Camm, Mrs. Gladstone, and R. Dean. Mr. G. HUMPHRIES was 2nd; he had John Walker, William Powell, Dr. Keynes, Mrs. Gladstone, and Goldsmith. Mr. W. TRESEDER was 3rd.

With twelve varieties, Mr. J. R. TRANTER, Henley-on-Thames, was 1st; he had T. W. Girdlestone, Mrs. Saunders, Lord Salisbury, R. T. Rawlings, James Cocker, Shottesham Hero, Shirley Hibberd, Mrs. J. Downie, and Miss Cannell. Messrs. J. CHEAL & SONS, Nurserymen, Crawley, were 2nd.

AMATEUR CLASSES.

In the class for twenty-four varieties, Mr. F. W. FELLOWES, Putteridgebury, Luton, was 1st. His leading blooms were Miss Cannell, Marion, T. W. Girdlestone, Mrs. W. Slack, W. Powell, Harrison Weir, James Cocker, Norma, Mrs. Langtry, Duchess of York, John Bennett, Shottesham Hero, and Frank Pearce. Mr. T. ANSTISS, Brill, Bucks, was 2nd; he had as his best blooms T. J. Saltmarsh, Dr. Keynes, Maud Fellowes, Duke of Fife, and J. T. West; 3rd, Mr. R. BURGIN, St. Neots.

With eighteen blooms, Mr. E. WEST, J.D., Henley-on-Thames, was placed 1st with Mrs. Langtry, Hercules, Dr. Keynes, William Powell, Shirley Hibberd, Mabel Stanton, Duchess of York, W. Keith, Goldfinch, Chieftain, and Arthur Rawlings; Mr. W. WHEELER, Henley-on-Thames, was 2nd.

For twelve blooms, Mr. J. THOMSON, Hollinswood, Oldham, was 1st with rather large but well-proportioned blooms of Maud Fellowes, William Rawlings, R. T. Rawlings, Chieftain, Willie Garratt, Rosamond, and Yellow Globe; 2nd, Mr. S. COOPER; 3rd, Mr. E. JEFFERIES, Langley Burrell.

With six blooms, Mr. R. WHILLINGTON was 1st; and Mr. SEAMER, 2nd.

For six blooms of any dark Dahlia, Prince of Denmark won all three prizes, exhibited by Mr. J. WALKER, who was 1st; Mr. R. BURGIN 2nd, and Mr. M. V. SEALE 3rd. Mrs. Gladstone took all the prizes as the best light Dahlia; Mr. WALKER was 1st; Mr. R. BURGIN, 2nd; and Messrs. J. CHEAL & SON, 3rd. With six blooms of a yellow self, Mr. WALKER was 1st, and Messrs. KEYNES & Co., 3rd, with William Powell; Mr. R. BURGIN was 2nd, with R. T. Rawlings. The best red was Arthur Rawlings, also from Mr. WALKER; and Mr. G. HUMPHRIES, 3rd, with the same; Mr. MORTIMER came 2nd, with Diadem. John Walker was the best white self, taking all three prizes; Mr. WALKER, 1st; Mr. SEALE, 2nd; and Mr. HUMPHRIES, 3rd.

The best six blooms of any other colour was Sunbeam, from Mr. SEALE; Mr. WALKER was 2nd with Imperial; and Mr. ANSTISS 3rd with Thomas Anstiss. The best tipped fancy was Mrs. N. Halls, red, tipped with white, six pretty blooms, were shown by Mr. WALKER; Mr. ANSTISS came 2nd, with Mrs. Saunders, yellow, tipped white. The best striped fancy was Matthew Campbell, from Mr. WALKER; and Messrs. CHEAL & SON were 3rd, with the same; Mr. BURGIN came 2nd, with the Rev. J. B. M. Camm.

The best show Dahlia, selected from the whole exhibition, was Duchess of York, shown by Mr. J. T. WEST. The best fancy was Mrs. J. Downie, shown by Mr. W. PETERS.

There were two classes exclusively for fancy Dahlias, and the competition was confined to amateurs. The best twelve blooms came from Mr. R. BURGIN, who had the Rev. J. B. M. Camm, Duchess of Albany, Henry Eckford, Chorister, Mrs. J. Downie, Mrs. N. Halls, Lottie Eckford, &c.; Mr. S. COOPER was 2nd; Mr. T. ANSTISS 3rd.

With six blooms, Mr. SEAMER was 1st; he had good blooms of Mrs. J. Downie, T. W. Girdlestone, Chorister, Rev. J. B. M. Camm, Mrs. N. Halls, and Matthew Campbell.

CACTUS DAHLIAS IN BUNCHES.

These were numerously produced, and covered a considerable space of tabling. Messrs. J. BURRELL & Co., Howe End Nursery, Cambridge, had the best eighteen varieties—a really splendid lot of blooms, and they comprised Imperator, Grandee, Ignea, Artis, Vesta, Jessica, Rosine (extra fine), Persis, Lyric, J. W. Wilkinson, Dinorah, Elvira, and Elsia, with two

others, all varieties of their own raising; and in addition Mrs. J. J. Crowe, Uncle Tom, and Mrs. Pearts. It must be admitted that this firm has taken a distinct step forwards as raisers. Messrs. J. CHEAL & SONS, Crawley, were 2nd. They had some very fine bunches, comprising Mayor Tuppenny, Regulus, Zephyr, Lord Alvestone, C. Woodbridge, Britannia, Mrs. J. J. Crowe, J. F. Hudson, Lucius, &c. Mr. J. STREDWICK, Silver Hill, St. Leonards, was a good 3rd.

With twelve bunches, Mr. S. MORTIMER was 1st. He had excellent bunches of Viscountess Sherbrooke, Harmony, Mrs. J. Goddard, Zephyr, Britannia, Mary Service, J. F. Hudson, and Lucius, as the leading varieties. Mr. H. SHOESMITH, Woking, was 2nd; and Mr. SEALE, 3rd.

In the amateurs class for twelve bunches, F. W. SHARP, Esq., Waltham St. Laurence, Twyford, was 1st, with very good bunches of Cycle, Britannia, Viscountess Sherbrooke, Mary Service, Uncle Tom, Stella, Castida, Countess of Lonsdale, Lucius, Keyne's White, and Alfred Vasey. Mr. J. F. HUDSON, Gunnersbury House, Acton, came 2nd, with Zephyr, Starfish, Mrs. J. J. Crowe, &c., all in good character; Mr. W. MIST, Igham, 3rd. For nine bunches Mr. H. L. BROUSSON, Sidcup, was 1st, and Mr. F. W. FELLOWES was 2nd, both exhibiting much the same sorts as those already named. Mr. W. PETERS, St. Lawrence, had the best six bunches, and Mr. W. MIST was 2nd in the class in which Mr. J. STREDWICK offered special prizes; and in the Society's class for the same number, Mr. E. JEFFERIES was 1st, and Mr. E. MAWLEY, Berkhamsted, 2nd.

CACTUS BLOOMS ON BOARDS.

In the class for sixty blooms, not more than two of one variety, shown with foliage, and also in subsequent classes of a similar character, there did appear to be a tendency on the part of some to use too much foliage; those stands were certainly the most effective in which the foliage was kept well below the blooms. Messrs. BURRELL & Co. were again 1st, and here their superb examples were largely composed of their new varieties, with the addition of such as Emperor, Charles Woodbridge, Mrs. Peart, Vesta, The Clown, Mrs. J. J. Crowe, Britannia, Radiance, J. F. Hudson, &c.; Messrs. J. CHEAL & SONS were 2nd, with very good blooms also, and Mr. J. STREDWICK 3rd.

For twenty-four blooms, distinct, Mr. W. TRESEDER was 1st; he had in excellent character Charles Woodbridge, Magnificent, Emperor, Loadstone, Mrs. J. Goddard, W. Treseeder (a charming light variety), Cornucopia, Mrs. Carter Page, Alfred Vasey, Mrs. J. J. Crowe, The Clown, A. J. C. Hare, &c. 2nd, Mr. W. BAXTER, nurseryman, Woking; 3rd, Mr. G. HUMPHRIES.

In the amateurs' division, the best eighteen blooms came from Mr. J. BRYANT, Salisbury—a very good representation of varieties already named; Mr. F. W. SHARP was 2nd.

With twelve varieties, Mr. H. A. NEEDS was 1st; he had two triangular bluish-coloured boards, on each of which he had staged six blooms of leading varieties; and Mr. E. TURNER was 2nd.

CACTUS DAHLIAS IN VASES.

Six blooms of twelve varieties being required, made a new and interesting feature, but for some reason they occupied some three different tables, which told against their effectiveness. It was stipulated that the blooms should be judged for quality. Mr. M. V. SEALE was 1st with excellent blooms, and an effective selection of varieties, admirably set up with suitable foliage, each vase standing in a bed of autumn-tinted Fern. Mr. SEALE had Mary Service, Night, Magnificent, Starfish, Mayor Tuppenny, Charles Woodbridge, Keyne's White, Countess of Lonsdale, Capstan, King of Siam, Stella, and Britannia; Messrs. J. CHEAL & SONS were 2nd; they used Croton leaves among their foliage, and set up very effective bunches; Mr. W. TRESEDER, Cardiff, was 3rd. There were five entries.

POMPON DAHLIAS.

Collections of these in twenty-four bunches, ten blooms in each, were a very interesting feature. There was not much to choose between Mr. TURNER's collection, which was placed 1st, and Messrs. CHEAL & SONS, which was 2nd. Mr. TURNER had slightly the smaller blooms, and the greater level of average size. The following were the most attractive sorts:—Isabel, Whisper, Eurydice, Sybil, Sunny Daybreak, Douglas, Emily Hopper, Captain Boyton, Phoebe, Mars, Snowflake, Arthur West, Vera, Bacchus, Iris, Tommy Keith, Galatea, Orpheus, Nerissa, Fabio, Nora, Ganymede, Clarissa, and Imogene; 2nd, Messrs. J. CHEAL & SONS, who had a number of the preceding varieties, also Donovan, Rosebud, Ernest Harper, Adrienne, Dr. Jim, Whisper, and Madeline; Mr. M. V. SEALE was 3rd; and an extra prize was awarded to Messrs. KEYNES & Co.

For twelve bunches, Messrs. J. BURRELL & Co. were 1st, having much the same varieties in excellent character; Mr. G. HUMPHRIES was 2nd; and Mr. J. WALKER 3rd.

In the amateurs' division there was a class for twelve bunches of Pompons. Mr. H. J. STENNING received the 1st prize, and Mr. J. F. HUDSON, the 2nd.

With six bunches, Mr. W. C. PAGRAM, The Whin, Weybridge, was placed 1st; and Mr. J. PETERS, 2nd. The varieties shown being similar to those already named.

SINGLE DAHLIAS.

In the open class for twenty-four bunches there were two entries; Messrs. J. CHEAL & SONS were placed 1st with excellent bunches of Mrs. Morland, Victoria, Puck, Miss Glasscock, Polly Eccles, Veronica, Daisy, Miss Henshaw, Violet Forbes, Formosa, Columbus, Miss Roberts, Shamrock, Miss Gordon, &c.; Mr. F. M. SEALE was 2nd, also with capital bunches of Jeannette, Emmie, Miss Roberts, Duchess of Marlborough, Northern Star, Dorothy Seale, &c.

With twelve bunches of singles, but with rather large flowers, Mr. J. WALKER was placed 1st, being the only exhibitor.

In the amateurs' division the best six bunches, ten blooms in each bunch, came from Mr. J. F. HUDSON, who had in good character, Miss Morland, Guilelma, Kitty, Polly Eccles, Eric, Naome Tighe, &c. Mr. C. Osman was 2nd; and Mr. W. MIST 3rd.

For six bunches of six blooms, Mr. E. MAWLEY was 1st; he had charming examples of Polly Eccles, Miss Roberts, Cleopatra, Tommy, Aurora, and Victoria. The Rev. S. S. PEARCE, Woodstock, was 2nd.

A few small classes were set apart for Amateurs who had never won a prize at a show of the National Dahlia Society, and there was a brisk competition in each.

DECORATIVE EXHIBITS.

The best Epergne of Dahlia blooms came from Mr. B. EDWARDS, Buckingham. Pompon Single, and Cactus Dahlias were nicely arranged with appropriate foliage. Mr. W. C. PAGRAM, was 2nd, and Mr. J. F. HUDSON, 3rd. Mr. H. E. BOUCH, Keston, had the best vase arranged with twelve Dahlia blooms; he had dark and salmon-coloured Cactus varieties arranged with appropriate foliage. Mr. J. F. HUDSON was 2nd, and Mr. E. TURNER, 3rd. Mr. H. A. NEEDS had the best three vases of Cactus Dahlias, very nicely set up; Mr. R. EDWARDS was 2nd; and Mr. J. F. HUDSON 3rd. Mr. W. TRESEDER was 1st with a shower bouquet of Cactus Dahlias; and Mr. SEALE was 2nd.

FANCY SINGLE DAHLIAS.

These were shown in collections of eighteen varieties, ten blooms of each. Messrs. CHEAL & SONS were 1st; and Mr. SEALE 2nd.

SEEDLING DAHLIAS.

These were shown somewhat numerously, but in a manner capable of great improvement, as they were placed upon a table in a confused manner, and it was very difficult to find those which had been certificated. This is another details of the show requiring the attention of the Executive.

SHOW DAHLIAS.

Several were staged, but decidedly the best was Viceroy, from Mr. G. ST. PIERRE HARRIS, Orpington, soft yellow, the basal petals edged with a slight rosy-lilac shade; a flower of good build, bold, and outline, and having a well formed high centre. This was awarded a First-class Certificate of Merit.

CACTUS VARIETIES.

were numerously shown, some very fine varieties coming from Messrs. J. BURRELL & Co.; two in particular were characterised by much distinctness of character, viz., Rosine (F.C.C.), a large full flower, the petals incurving to the centre, the colour a rich fiery rose, the tips of the petals soft rose with edgings of a delicate pink. This is a variety certain to be variously described, but there can be no difference of opinion as to its beauty and distinctness. The other is J. W. Wilkinson (F.C.C.), a flower of singular refinement, the colour crimson, flushed with rosy-carmine, the centre of the flower having a slight dark shading. Galland (F.C.C.), brilliant scarlet, a flower of fine shape and refinement of character; Vesta (F.C.C.), a lovely variety of the Delicate type, but a little deeper in tint and in the centre; if this shows constancy of character, it will become a great favourite; Lyric (F.C.C.), brilliant orange red, a fine Cactus type, but with a tendency to looseness in the centre; Dinorah (F.C.C.), salmon-buff, the petals tipped with a paler tint, distinct in colour and very pleasing; and Artus (F.C.C.), a mixture of salmon and apricot, and flushed slightly with crimson. Other promising new varieties, also from Messrs. BURRELL & Co., are Imperator, ruby-crimson; Ignea, pale scarlet; Grandee, and Persis.

From HOBBS & Co. (J. GREEN), Dereham, came Baden-Powell (F.C.C.), as described in our report of the Wellingborough show. From Mr. J. STREDWICK, St. Leonards, came J. Weir Fife (F.C.C.), rose flushed with purple at the points, and may be described as a glorified Cinderella; Lord Roberts (F.C.C.), cream with yellow centre, a highly refined variety, and quite distinct; Richard Dean, brilliant deep red; General French, orange apricot, the centre florets rather flat, but a bright, taking variety; Eclipse, pale yellow, &c.

From Mr. S. MORTIMER came Purity (F.C.C.), a very promising white variety, which will become a real acquisition if it displays constancy of character. Many other new Cactus varieties were submitted for notice.

POMPON DAHLIAS.

continue to increase, and of those staged on this occasion, the most noticeable were Buttercup (F.C.C.), pale yellow, but scarcely perfect in point of shape, and Doris (F.C.C.), pale lilac-pink; these were from Mr. M. V. SEALE, Sevenoaks. From Mr. J. T. WEST, Brentwood, came Daisy (F.C.C.), a well-shaped variety, of a buff and apricot shade; Adelaide (F.C.C.), delicate lilac, with a slight purple tip—a well-formed flower; and Darkest of All (F.C.C.), maroon, almost black—a model in point of petal and outline; also Zurline (F.C.C.), maroon, the basal petals distinctly edged with crimson, from Mr. C. TURNER.

MISCELLANEOUS EXHIBITS.

Messrs. RIVERS & SON, Sawbridgeworth, had fruit trees in pots; Messrs. J. LAING & SONS hardy plants, cut flowers, &c., forming two large exhibits; Messrs. H. CANNELL & SONS Cactus and other Dahlias in great variety; Mr. J. GREEN, Dereham, a very large collection of Dahlias, mainly Cactus; Messrs. F. CANT & Co., Roses; J. PETER & SONS, Begonias; and Messrs. A. W. YOUNG & Co., cut flowers.

ROYAL CALEDONIAN HORTICULTURAL.

SEPTEMBER 12, 13.—Undoubtedly this exhibition was one of the best the Society has held in late years. The Waverley Market was, as usual, the scene of the show. Grapes were exhibited in grand form, especially Black Hamburghs, Black Alicante, Gros Colman, and Lady Downes.

The great classes respectively for six bunches and for four bunches of Grapes were strongly contested, and in both cases the prizes went, in the order of merit, to Messrs. LUNT, Keir Gardens, Stirling; D. & W. BUCHANAN, of Kippen; and Mr. BEISANT, gr. at Castle Huntly.

MESSRS. D. & W. BUCHANAN exhibited grand bunches, not for competition, of their new seedlings, Diamond Jubilee, and Forth Vineyard, as well as of Black Alicante.

White Grapes were rather deficient in quality, Mr. LUNT's however, excepted, which were so fine, as not only to secure the 1st prize in the ordinary classes, but also for the best flavoured white Grapes shown.

The class for the best decorated table of fruit brought out only one competitor, Mr. BARNES, Eaton Hall gardens, Chester, who also secured the 1st place for ten dishes of fruit; Mr. SMITH, gr., Oxenford Castle, being 2nd; and Mr. MURRAY, gr., Culzean Castle, 3rd. Peaches were extraordinarily good generally. There were eighteen dishes of twelve fruits of these shown; Mr. LEYDEN was 1st, and Mr. BARNES, gr., Eaton Hall, 2nd.

Nectarines were equally abundant, but the fruits were comparatively less fine, Mr. SMITH had the finest. There was an enormous quantity of hardy fruits, such as Apples, Pears, and Plums, and flowers were lavishly shown, though everywhere complaints were rife of the unfavourable nature of the season. Roses were really wonderful for this date. Messrs. DICKSON, Belfast; COCKER & SONS, Aberdeen; W. & R. FERGUSON, and D. & W. CROLL, were the chief prize-winners.

Very striking were the best-arranged tables of hardy flowers (15 feet by 5 feet), Messrs. COCKER being 1st, and Messrs. HARKNESS, Bedale, 2nd.

Dahlias, Sweet Peas, Gladioli, and Carnations, were also well shown.

MISS GEDDES, Murrayfield, with a nice arrangement of blue Cornflower, white Sweet Peas, and scarlet Geraniums, was 1st for the best dinner-table decorations. Plants were perhaps the least effective feature of the exhibition.

VEGETABLES.

were exhibited in enormous quantities. For a collection of twelve varieties, Mr. GIBSON, Danesfield, Bucks, was placed 1st with a grand lot.

Non-competitive groups were one of the great features of the Show, and it is impossible to do more than name a few of the chief of these, of which one of the most striking was a collection of superb vegetables with flowers representing their strains, from Messrs. SUTTON & SONS, Reading. Dahlias, Roses, &c., from DOBBIE & CO., Rothsay; a grand collection of cut Phloxes, Pentstemons, and Carnations, from Mr. FORBES, Hawick.

Herbaceous flowers were shown from Mr. M. CUTHBERTSON, Rothsay; LISTER, Rothsay; COCKER & CO., Aberdeen; CAMPBELL, Blantyre; HARKNESS & SONS, Bedale; Lillies from WALLACE & CO., Colchester; Chrysanthemums from WELLS, Rehill; Groups of Plants from METHVEN & SONS, JOHN DOWNIE, and Messrs. CUNNINGHAME, FRASER & CO., County Bank.

Weather grand and attendance very large.

MISCELLANEOUS SOCIETIES.

Wargrave Gardeners.—At the monthly meeting held on the 5th inst., a paper on "Sweet Peas" was read by Mr. BAZELEY, of the Twyford nurseries. The Cupid varieties were recommended as pot-plants. The old-fashioned perennial Sweet Pea was not forgotten, and its use advocated for those situations where the annual variety will not thrive. The paper closed with a list of some of the best self-coloured varieties. Some fine exhibits were staged by members, and Messrs. FINCH, HASKETT, and SCOTT were awarded Certificates of Merit. H. C.

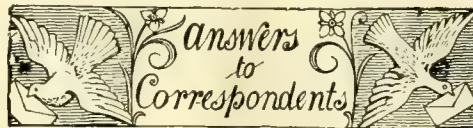
The Brixton, Streatham, and Clapham Horticultural.—Mr. W. Roupell, of Harvey Lodge, Roupell Park, S.W., kindly informs us that in consequence of the changes that are taking place in the suburbs of South London this Society has decided to alter and extend its radius to two and half miles from Streatham Hill Station. The autumn show will be held on November 7 and 8, at the Hall near Streatham Station.

BRITISH HORTICULTURISTS AT THE INTERNATIONAL EXHIBITION, PARIS.—Among those of our countrymen who have taken Prizes and Medals, we learn from the list published in the *Anglo-Saxon Guide to the Exhibition at Paris* that the firm of CHIVERS & SONS, Histon, Cambs, was awarded a Silver Medal for fruit jellies; Messrs. MERRYWEATHER & SONS, 63, Long Acre, W.C., makers of pumps, syringes, &c., a Grand Prize; Messrs. F. SANDER & CO., St. Albans, a Silver Medal; and Messrs. SUTTON & SONS, Reading, a Bronze Medal.

THE DEVASTATION IN TEXAS.—Following the track of this disastrous hurricane, the fruit crops have been destroyed—what but the other day looked so full of promise is now a wreck. Sugar plantations are also extinguished, and many refineries utterly destroyed—a loss of millions of dollars. As affecting one of our own great home industries, the destruction of a large extent of cotton crop still further darkens the outlook for Lancashire mill proprietors and operatives.

Obituary.

LOUIS MENAND.—We learn with regret of the death of this pioneer florist, &c., at Albany, N. Y., on August 15. The deceased gentleman, who was in his ninety-third year, landed in New York in 1837, and removed to Albany in 1840. His was a remarkable personality. The Menand collection of Orchids and little heard-of hard-wooded plants was a remarkable one.



Calceolarias and Asters: Troubled. Calceolarias of the sub-shrubby kinds employed in the flower-garden are liable to sudden collapse, which is one of the reasons that gardeners have discarded them in favour of yellow Violas, Tagetes, Calendulas, Celosias, dwarf Dahlias, Gazanias, &c., which have not this disability. A variety of Calceolaria not so liable as some others to go off so disappointingly, is amplexicaulis, flowers yellow, of a light tint. The Asters may have "gone off" from an attack of the special Aster-worm, or of fungus. You should send a few specimens for our inspection.

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that **not more than six varieties** be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

J. B. S. The Apple resembles White Astrachan, but we should have liked to have seen another sample with foliage.—**G. B., Hants.** 1, Grenadier; 1, Bedfordshire Foundling; 3, a small example of Castle Major; 4, Golden Spire; 5, Alfriston; 6, Colville Rouge d'Été.—**S. S. J., Grafton.** 1, Domino; 2, Greening's Pippin; 3 and 4, Lord Suffield; 5, Damelow's Seedling; 6, Lord Derby.—**A. L., Surrey.** The Pear is Seckle, but the fruits are very small, and not in character; due, no doubt, as you say, to the tree being old and decayed.—**A. T. 1,** Lawson's Golden; 2, Denniston's Superb; 3, Transparent Gage; 4, Coe's Golden Drop; 5, Washington; 6, Sultan.—**Edgar, Leicester.** 1, Potts' Seedling; 2, Grenadier; 3, Lemon Pippin; 4, Dumelow's Seedling; 5, Duchess of Oldenburgh; 6, Cockle's Pippin.—**W. D., Bucks.** The Plum is Goliath, and the Apple is Red Astrachan.—**J. H. B., Middlesex.** The Nonsuch. An old Apple occasionally seen in a few markets.—**F. R., Kent.** 1, Hollow Core; 2, Whorle Pippin; 3, Lane's Prince Albert; 4, Colville Blanche d'Été 5, Unknown, and in the state sent valueless; 6, Apparently a small imperfect example of Manks Codlin.—**C. A., Peterborough.** Goliath, sometimes seen under the name Nectarine Plum, which is quite distinct.—**C. D., Lincolnshire.** 1, Duchess of Oldenburgh; 2, Scarlet Nonpareil.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—**G. Clarke.** Nandina domestica.—**William Lewis.** 1, Sequoia sempervirens; 2, Solidago virgo-aurea; 3, Echinops sphærocephalus; 4, Aster Tradescanti (too young).—**A. Hope.** Sedum Cepea L.; the other plant too fragmentary.—**J. Denham.** Sedum pulchellum.—**Ed. Bland.** Clematis Davidiana.—

George Payne. Erigeron canadense, Salvia car duacea, Melilotus officinalis.—**Young Gardener.** 1, Erica stricta; 2, Erica vagans; 3, Daboecia polifolia; 4, Calluna vulgaris alba; 5, Calluna vulgaris; 6, ditto.—**A. and Mc., Glasgow.** Stenolaphrum glabrum variegatum. Often called S. americanum.—**N. M. 1,** Saponaria officinalis flore pleno; 2, Colutea arborescens; 3, probably Crataegus, but impossible to determine without better material; 4, Berberis Darwini.—**H. G.** Rudbeckia speciosa and Hæmanthus carneus.—**A. L. J.** The yellow Orchid is Odontoglossum Lindleyanum; the white and purple one Oncidium incurvum; the other, Miltonia Clowesi. Why did you not number the specimens? We will reply about the insect next week.—**Constant Reader.** 1, Peperomia argyrea; 2, Cyrtodeira fulgida; 3, Adiantum capillus veneris.—**P. W.** The Cattleya is a form of C. intermedia; the Cypripedium is a C. Rothschildianum cross, and near to C. x Massaianum, illustrated in the *Gardeners Chronicle*, 1893, xiv., p. 267.

NECTARINES FROM OPEN WALL: **G. Carpenter.** Very nice fruits, well ripened.

PLUMS DENNISTON'S SUPERB: **R. L. C.** Excellent in flavour and appearance.

QUALIFICATIONS OF A YOUNG GARDENER WISHING TO ENTER THE ROYAL BOTANICAL GARDENS, KEW. **G. B.** He must have been employed in a good garden for some few years, possess a fair acquaintance with the art of gardening, write a good hand, and generally prove to the satisfaction of the authorities that he has enjoyed a fair education. He should also possess good testimonials from previous employers. On application to the Director, the applicant will be furnished with a full list of qualifications; but as there are far more applicants than vacancies, "G. B." will have to exercise patience.

SPECIAL PRIZE: J. R. We do not think that in the event of there being no competition the donor of a special prize should forfeit his money.

THE NECTARINE PEACH: **A. Bateman, Brixworth Hall Gardens.** Your Peach weighing 12 oz., was a very fine specimen, but we are unable to give an opinion upon its flavour as the fruit was quite "past" when it reached the Editor's table. The variety is one of the largest fruiting section, and generally it is not of the finest quality.

WHITE GRAPE: **Charles Baker.** The variety of Grape sent under the name of "Muscatelle" is known in British gardens as Raisin de Calabre and Calabrian Raisin. A late good keeping Grape of moderately good quality. It succeeds in a cool vinery such as your friend's, but it will stand a considerable amount of heat.

YELLOW CHINA ROSE &c.: J. D. Among the so-called Monthly Roses (section Rosa Indica), there are several which approach a yellow colour, viz., Madame Bureau, Madame Desprez, and Meilleux. Rosa fimbriata is a synonym of R. tomentosa. Any grower of Roses in a large way would supply the Monthly Roses, and probably R. tomentosa also.

COMMUNICATIONS RECEIVED.—P. Weathers.—W. T., Ipswich.—J. H. B.—G. W. E.—J. G. W.—R. L. C.—J. A.—G. A.—J. McL.—T. L. T.—E. Gower.—H. G. R.—A. Corps.—A. W. Waberer.—W. B. Hemsley.—F. W. B.—W. Smythe.—H. Kempshall.—C. W. Dod.—C. H. W.—A. G.—J. W.—W. Mac P.—W. G. E. B.—P. K.—A. M.—T. Gregory.—Clematis—Scotica.—F. G. C.—T.—E. H. C.—W. J. W.—J. S.—F. W.—F. H.—A. F.—C.—J. J. F.—R. J. Lynch.—J. R. L.

SPECIMENS, PHOTOGRAPHS, &c., RECEIVED WITH THANKS:—W. G. S.—W. E. G.—J. F. Smith.—J. O'B.—J. Simpson.—J. B.—A. D. W.—F. W. B.—W. F. Y.—J. McLelland.—W. Fitzherbert.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Markets and Weather, see p. x.)



VIEW IN THE GROUNDS AT HIGBURY, BIRMINGHAM, THE SEAT OF THE RT. HON. J. CHAMBERLAIN



THE

Gardeners' Chronicle

No. 717.—SATURDAY, SEPT. 22, 1900.

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WENGERN ALP, SWITZERLAND.

HERE, up in the clouds with the giant peaks of the Oberland all around one, it is difficult in mid-September to say much as to the vegetation, for that is over for the year. It is easy to comment on the gardening of the district—there is none. Flowers there are few, beyond a few belated Aconites (*Lycotomum* and *Napellus*). *Euphrasia* (*Eyebright*) adorn the mountain-sides with their cheerful white flowers; and they are of all sizes that a *Euphrasia* is capable of. Some botanists make I know not how many species of them, but here they grow, or many of them do, intermixed; and it is hard to see that they can be anything more than seed variations. The little yellow-flowered species is an exception; it is distinct enough to attract attention at once. *Gentiana germanica* is abundant in the pastures. This is the plant originally noted as native by the late Rev. Harpur Crewe, who found it as we have since done in the Halton woods, near Tring. How it came to be overlooked as a British plant so long seems strange, as it when seen in quantities at least, very different from *G. amarella*. How high it goes I cannot say. I can only say that I found it in full bloom on the top of the Lauberhorn, at a height of over 8000 feet. *Calluna vulgaris*

is abundant on the moors. *Alchemilla alpina* is not uncommon; while the foliage of the common *Ladies mantle* is bejewelled with brilliant dew-drops. Patches of *Linaria alpina* attract by the brilliancy of their colour. It is useless to comment on the myriads of plants not now in bloom. One can only imagine what a mosaic they must present in the spring. It is worth noting, however, that at the top of the Rothstock the rocks are absolutely barren but for little starvelings of *Saxifraga oppositifolia*, which barely manage to exist in the cracks of the hard rocks.

At this season the forests are most interesting, their varied tints of green are most lovely; quaint fungi abound in them, including the "Stein-pilz," *Boletus edulis*, which forms excellent eating. On the western side of the ridge, between Lauterbrunnen and Wengern Alp, the forest consists almost entirely of Spruce, intermingled at the lower elevations with various deciduous trees; but above Wengern the broad-leaved trees gradually vanish, the Alder (*Alnus*) holding out longest. As we ascend, even the Spruce gets smaller and more stunted, and whilst in the lower elevations seedlings and young plants are to be found in abundance, in the upper parts of the forests seedlings and young plants are very scarce, as if the climate was not propitious for the fertilisation of the ovules. At any rate, a little higher up the trees give up the struggle, and at the Scheidegg, at an elevation of nearly 7,000 feet, there are none to be found, unless in the form of blasted stumps. Not a *Pinus cembra* is to be found on this side of the ridge. Strange to say, however, one has hardly crossed it before the *Cembras* appear, ragged veterans truly, but there they are. Indeed, the slopes descending into the Grindelwald valley have the appearance of a warmer climate than that which prevails on the more barren Wengern side. Both slopes are more or less covered with *Rhododendron ferrugineum* and *R. hirsutum* growing in company, and not on different soils, as they sometimes do. Many of them bear great fleshy knobs, rose-red on the sunny side, of the size of Cherries, and like some distorted fruit. These gouty swellings are the result of the attack of a fungus (*Exobasidium rhododendri*), which, when growing on some other plant, assumes a totally different appearance. What creatures of circumstance we all are, not excepting our remote relatives, the Fungi!

The sublimity of the mountains, the excitement caused by the low thunder of the avalanches at frequent intervals, the interest in gazing at a herd of chamois, all combine to distract one's thoughts from wild plants, especially at this season, so I must be excused for ending this letter by asking if any reader has seen of late the white form of *Agrostemma coronaria*, which we met with in a garden at Wengern lately? Mixed with *Gentiana asclepiadea* it forms an effective bouquet. *The Rambler*.

BOTANY IN RELATION TO THE GARDEN.

(Continued from p. 202.)

II.—FIELD BOTANY.

IN carrying out a series of investigations in different parts of the country during the past summer, I have been greatly astounded at the ignorance which still prevails among us in the matter of field botany. This ignorance is not peculiar to any one class; it is found everywhere.

I go to the University city, and meet a Bachelor of Science fresh from the class-room and the examination hall, and he tells me he knows nothing of field botany. When I visit the botanical gardens of the city, the lecture theatre, the laboratory, and the museum, I find everything that is necessary for the student's equipment. Here is an acre of land set apart for the cultivation of plants in beds, arranged according to the natural orders. Buttercups and Meadow-Rues are here, Poppies there, Primroses yonder, and Composite plants further off. The museum has a splendid collection of diagrams, wax models, preserved specimens, and every facility is afforded the student for mastering his subject. He can tell you all about pericarp and phloem, anthotaxis and the andraecium, dichogamy and dimorphism; but he cannot distinguish a Rockrose from a Buttercup, or say how the Buckbean stands related to the Gentian. He has analysed and dissected, has cut and stained sections, teased out tissues, and learned the most microscopic details, yet he cannot tell you how to identify a Crucifer, or what there is peculiar about the Scabious or Scrophularia.

I visit the gardens of a neighbouring squire, and chat with the intelligent young man who shows me round. When we come to some fine pots of Cyclamens I find he has no idea that the plants are closely related to the Primrose, Loosestrife, and Pimpernel; and discover that the two latter are even unknown to him, or exist for him only as names. We observe the Guelder Rose, but he has never seen it growing in the hedgerows with its fertile flowers in the centre, and does not understand the original use of the aborted florets, which give the cluster its ball-like appearance. A fine Medlar is bearing fruit in the garden, but the gardener has never seen it in a state of nature, does not know that it bears thorns, and has never read its history. We look at the Carnations, Pinks, Picotees, Sweet Williams, but my guide has never heard that in our English flora there are at least half-a-dozen Pinks, and that the Campions, the Ragged Robin, the Soapwort, and the Catchflies, all belong to the same wonderful family. And when we go to the Orchid-house, he tells me that these rare and costly flowers came from abroad, and looks at me with incredulity when I tell him I could show him where Orchids grow near his own door, whose flowers assume the shapes of bee and fly, spider and butterfly, and that there are nearly fifty species of Orchis in the British flora.

I contend that this condition of things is greatly to be deplored, and ought to be remedied. I will confine myself to the consideration of the latter case—that of the intelligent gardener who knows nothing of English botany; or if he knows anything at all, is familiar only with the botany of books. Two things, I think, ought to be considered. We must first enquire the cause, or causes, of this ignorance, and then the means of remedying the defect.

Ignorance of field-botany—a subject of the highest interest and value to the gardener—is due to a variety of causes. In the first place, most young people are repelled by the long names and hard words which they encounter in opening a book on botany. Usually the terms are unexplained, the names are meaningless, and the words fail to grip the memory or the imagination. The would-be student, if he have attended no classes or lectures, does not know the meaning of stamen or pistil, calyx and corolla, style and ovary, and finds great difficulty in discovering which is which. If at last he succeeds, he is baffled with new terms, such as awn and pappus, capsule and carpel, perianth, and nectary, to say nothing of such words as corolliflorous and calyciflorous, polypetalous and gamopetalous. These ugly terms certainly have their use, but they are the bugbear of the amateur botanist. A few years ago it was impossible to learn anything of botany without first mastering such words as these, and the tradition still lingers, to the great detriment of botanical science.

In the next place, when botany is taught in

schools it is seldom so taught as to make it interesting. The teacher is too often familiar only with his text-book, and keeps close to the printed page. He has no enthusiasm for his subject, or the code does not allow him to take his class into the fields and lanes to study Nature at first hand. In towns he has access to no flowers, gardens, or fields; in the country these things are too common to possess any charm.

We add a third cause. The spirit of the age is still sadly too commercial and utilitarian. The father laughs at the boy who fills his fists with Dandelions, and the girls who bring home their laps full of Daisies and Cowslips are thought to be unpractical. It is lamentable to think that many parents would rather see their boys smoke a bit of cane than study the nature of the Clematis from which it had been cut. Yet we know, from careful observation, that the great percentage of children are born naturalists, are quick and accurate observers, and could easily be trained to become expert botanists, if only they were taken in hand in the right way.

There are, again, various reasons why young people fail in the study of field botany, and after a time give up the pursuit in disgust. I have observed that one of the principal reasons is to be found in attempting too much. A gardener, for example, wants to learn all he can about the flowers in the fields and hedgerows around his home. He gets hold of a work on flowers, possibly a very indifferent book at best, and goes out to study. He sees a yellow flower, and has enough knowledge to recognise it as a Composite. But when he comes to trace it out he is bewildered among the Dandelions and Hawkweeds, Goats-beards and Hawkbits, and either fails to find the plant a name, or identifies it wrongly. He finds another plant, and thinking it is a Buttercup calls it the Creeping Crowfoot, when in all probability it is a Potentilla. Next he goes for the Willowherb, the Valerian, and the Hemp Agrimony. Misled by appearances he mixes Umbellifers with Composites, Roses with Buttercups, Bogbeans with Lilies, Epilobes with Crucifers, and becomes so bewildered and confused that he gives up in despair. It is as though a boy at school attempted to answer questions in vulgar fractions, decimals, proportion, and even geometry and logarithms, on the strength of his having got as far as division and multiplication! Now the student who has no guide or teacher must learn to go a step at a time. Umbellifers and Composites, Willowherbs and Potentillas, cannot be mastered in a day or a year by one who has all the work to do himself. He should begin with one order, or at most two, and be content to master them thoroughly; if he would take a Violet, Primrose, Deadnettle, Lady's-Smock, or some other well-known flower, and work from the known to the unknown, quietly and patiently seeking out every species he can find that belongs to the order, his knowledge would speedily grow from more to more. From Primrose he goes to Cowslip, then to Oxlip, or hybrid forms produced by the crossing of the two species; and thus to Pimpernel and Loosetrife, Cyclamen, and Water-Violet, Brookweed and Saltwort, till the whole of the native members of the Primrose order are familiar; and he can understand why he has Primula and Polyanthus, Auricula and Oxlip, Cyclamen and Starflower, among his greenhouse or hardy plants. How great will be his pleasure, when he has mastered the common English forms, to find that the Chinese Primrose or the American Dodecatheon is in reality built upon the same plan and belongs to the same wonderful group; and if, at the same time, he reads one of the many fascinating volumes which deal with the cross-fertilisation of plants, what a world of wonders will be opened to him.

Another reason why many young gardeners fail in the study of botany is to be found in the fact that they cannot get rid of the old, false idea that botany means the knowledge of a number of hard and unpronounceable words. What is wanted is

that students should recognise the prime importance of accurate and first-hand observation. A man may be ignorant of all the book names of every plant he sees, and yet be an adept in botanical lore. We have had few truer botanists than Darwin, yet with what child-like glee he writes to a friend to tell him how he has made out a common grass in his declining years. Let not the student be dismayed because he cannot roll off a string of unintelligible names: his business is to master facts. Once he becomes lost in the mystery and beauty of plant life he will find it comparatively easy to identify and remember the plants he is studying; but if he begins at the other end his progress will probably be slow. Observations on the colours of flowers, their shapes, times of opening and closing, insect visitors, frequency or rarity, habitat and habits are always worth recording, and constitute the truest form of natural science. Notes should be freely made. Nothing should be taken for granted. Statements made by others in conversation or writing should be checked, and thus proved true or false. The effects of soil, manure, climate, animal and insect life, the proximity of dwellings, and cultivation, should all be made subject of careful observation, and the notes reviewed and revised as knowledge grows.

It may be encouraging to some young gardeners who want to improve themselves, if I say that some of the most successful workers I have known have been practically self-taught, and twenty years ago it was not so easy as now. Darwin and Lubbock, Henslow and Grant Allen, Dr. Taylor and Hilderic Friend, have done much to popularise the study of flowers and flower-lore; and to the freshness and charm of their style is largely due the stimulus which has been given of recent years to the study of field botany.

Field work and book work should go hand in hand. *The Story of the Plants* may be read during moments of leisure, and followed by such a book as Lubbock's *British Wild Flowers in Relation to Insects*. Henslow's *Botany* will pave the way for Hooker's larger work; and Step's *Plant Life*, or *Romance of Wild Flowers*, alternate with studies in Taylor's or Grant Allen's various volumes, or Friend's *Flowers and Flower Lore* if it can be obtained. We promise the student who will give a year to this delightful pursuit, such success and enjoyment as will make him a more enthusiastic gardener and more devoted workman; and we are sure that if masters and head gardeners would put facilities in the way of those who wish to learn botany on these lines, they would reap a rich result. *A Sussex Naturalist*.

(To be continued.)

MYCORRHIZAS OF ORCHIDS.

THE roots and underground organs of more than 700 species of Orchids have been examined, and all of this number are found to have formed unions with fungi in such a manner as to form mycorrhizas. A mycorrhiza consists of the structure resulting from the attachment of the fungus to the roots or absorbing organs of a higher plant in such manner that the association results in benefit to both. The tube-like threads of the fungus generally gain entrance to the roots while they are young, and grow forward, as the root extends in length, in the tissues just underneath the epidermis. Branches of the tubes or hyphæ are sent out through the root-hairs into the soil, and the two plants work in partnership to accomplish nutrition. The fungus takes up the products of decaying leaves and organic matter in the soil, carries them into the root, yielding the greater portion to the higher plant, which may actually get all of its food from its minute associate. Some of this food, however, is built up into starch and sugar, which is given back to the fungus. The higher plant thus takes the crude material given it by the fungus, and makes it into substances which the fungus is unable to construct, but which form a very valuable food for it. In addition to this advantage

to the fungus the root offers it a habitat in which it is free from many dangers it would encounter in the soil.

The nicety of attention necessary to the successful culture of most Orchids is doubtless due to the fact that, not only must the proper conditions of water and temperature be offered the higher plant, but its unseen associate must be provided with exactly the proper soil and food.

The fungi which inhabit the hanging roots of the epiphytic Orchids bear the same relation to them, though many inexperienced writers have described them as parasites.

By the co-operation of the fungus the Orchid is relieved from the fierce struggle to win its food from the soil necessary to unaided species, and the great variations and marked characteristics of the leaves and flowers of this group may be due in part to its method of nutrition. Although not generally known, the variations of the underground organs are almost as great as those of the aerial parts. Thus the Coral-roots (*Corallorhizas*) have lost their roots entirely, and the underground coralloid formations which gives them their name, are really short branches serving the purpose of roots, and are inhabited by a fungus. Some of the near relatives of the Coral-roots show a tendency to construct similar underground branches, especially *Aplectrum* and *Calypso*.

If one digs up a specimen of *Aplectrum* he will find an old corm of last year's growth connected by an offset an inch long with a young corm which sends up a leaf in the autumn. The fungus which lives in the roots of the old corm travels through this offset and down into the new roots formed at its tip when it begins to enlarge to make the young corm. Now, if the growth of the offset should be disturbed, or if it should not be properly nourished from the old corm, it develops all of the latent buds along its sides into coralloid branches, with hairs through which the fungus sends tubes out into the soil and brings in a supply of material.

The leaves which spring from offsets developed in this manner are much narrower than the ordinary forms. The clumps of *Aplectrum* which grow alongside a decaying log, or which have found a footing in the remains of one, are very apt to make these coralloid formations, or they may be produced at the will of the experimenter, if old corms are separated from the plant and made to germinate the latent buds. *Journal of the New York Botanical Garden*.

PHYSIOLOGICAL DIFFERENCES BETWEEN THE SESSILE AND PEDUNCULATE OAKS.

DURING the recent visit of the English Arboricultural Society to Chatsworth, we found that pedunculate Oaks in the Peak are becoming stag-headed, but that there are many fine, vigorous sessile Oaks. This was specially noticed in the Beechmore Woods above Rouseley, where all the pedunculate Oaks are dying, while the sessile ones are still flourishing. The soil in these woods is a fairly deep loam, above the mountain limestone, and the trees are growing on a hillside, with good natural drainage.

British botanists have hitherto considered both these Oaks as mere varieties of *Quercus robur*, L. Continental botanists and foresters, on the other hand, separate them specifically, as *Quercus pedunculata*, Ehrh. and *Q. sessiliflora*, Sm., and are well acquainted with the different demands each of them makes on water in the soil. This is why the distinction between them is so important in forestry, as it is a fatal error, well illustrated by the condition of the Chatsworth Oaks, to plant pedunculate Oaks on too dry a soil.

The British view regarding these Oaks is largely due to the fact that natural hybrids between them are not uncommon, as is the case with Willows and other wind-fertilised plants. Thus, according to the *Gardeners' Chronicle* of May 29, 1841, to which Dr. Masters has kindly referred me, Dr.

Greville, when reporting to the Edinburgh Botanical Society, exhibited a number of specimens of Oaks, showing that the peduncle varies from 5 inches in length to its complete absence. He also states that the botanical characters pass insensibly and completely into one another, and cannot therefore

Their leaves, he says, have a darker hue and a more glossy appearance, the tree has more numerous boughs, which are sub-divided into a greater number of small branches, and diverge almost horizontally from the stem; these of the pedunculate Oak being few in number, slightly

He imagines, from finding much wood of this species in old buildings, that it was formerly the chief British Oak, and he recognised sessile Oak wood in a submarine forest at Hastings, and in that of most bog oaks, thus proving the antiquity of the species.

Mr. W. Stevenson, in his *Trees of Commerce*, states that sessile Oak is sometimes called Chestnut Oak, the wood being mistaken for Chestnut. Another common name for this species is Durmast Oak.

I remember finding a hybrid Oak at Burnham Beeches, when on a visit there with Prof. Marshall Ward, but I could not persuade him to accept the continental opinion regarding the specific differences between the two Oaks. These differences, however, are strongly marked, and, as I found to be the case in the Peak, no careful observer can possibly fail to recognise them. Botanists are too often guided by mere botanical specimens, without studying the general aspect of the tree as it grows, or its anatomy. In these respects the dissimilarity of the two Oaks is very marked, while acorns of either produce plants like the parent-tree, a fact that is constantly being acted on by French and German foresters, and which supports the assumption that they are distinct species. I will now proceed to describe the nature of the two Oaks.

In the pedunculate Oak, the foliage is in tufts at the ends of the smaller branches, and there are comparatively few branches and main boughs, the latter forming an acute angle with the stem, which, except in dense high woods, soon loses the tendency to form a strong leader. On a bright summer day, therefore, the crown of the pedunculate Oak shades the ground only in patches. The leaves are sessile on the twigs, or nearly so, they are thus enabled to draw freely from the wood the water that is copiously supplied by the few large boughs and their ramifications. The leaves are comparatively soft and membranous; thus they can transpire freely (fig. 61). I purposely omit for the present any reference to the position of the acorns.

In the sessile Oak, there are more boughs than in the pedunculate; they are smaller, more horizontal, and much more ramified than in the latter tree. The sessile Oak usually retains a strong leading shoot later in life than the pedunculate one, and this is extremely useful in its competition with Beech. The foliage is more uniformly distributed over the crown of the tree, and protects the soil against the desiccating effects of the sun's rays much better than that of the pedunculate Oak. The leaves of the sessile Oak are on petioles about an inch long (fig. 62), and consequently the supply of water they receive from the wood of the twigs is restricted in quantity, while, owing to the diffuse ramification, the latter obtain less water from the roots of the tree. The leaves are also of a darker green, and are hard and leathery; they thus transpire less freely than those of the pedunculate Oak. It appears, therefore, that the sessile Oak is thoroughly adapted to economise the water its roots absorb; while the pedunculate Oak necessarily uses larger quantities of water. *Quercus pubescens* is a variety of the sessile Oak common in hot localities in the south-east of France, the under-surface of the leaves and the buds of which are covered with a heavy tomentum, and thus protected still further against excessive transpiration. I will now discuss the position of the acorns in the two species.

In the pedunculate Oak the acorns are situated near the apex of tapering peduncles; that in vigorous trees, like the one shown in the plate, may be 4 or 5 inches long. In the sessile Oak, on the other hand, the acorns are either sessile on the twigs, or clustered together at the base of very short peduncles. It is well known that plenty of moisture favours a purely vegetative growth, while it is prejudicial to the formation of fruit. I could give many illustrations of the truth of this statement, but will merely remark here that Mr. Martin, agent at Chatsworth to the Duke of Devonshire, informed me that acorns are rare on Oaks near Tavistock, where the climate is very damp.



FIG. 61.—PEDUNCULATE OAK FROM PAMPISFORD, CAMBRIDGESHIRE.



FIG. 62.—SESSILE OAK FROM THE PEAK, DERBYSHIRE.

be relied upon in collecting acorns, or in supplying the dockyards with timber.

In another paper, however, that appeared about the same time in the *Gardeners' Chronicle*, Mr. Billington states that sessile Oaks, termed Knot-Acorn Oaks in the Forest of Dean, produce there, and in the county of Durham, the hardest, closest, and firmest timber; and that there is no difficulty in distinguishing them from pedunculate Oaks.

ramified, and forming a decidedly acute angle with the stem.

Mr. W. Atkinson, of Silvermere, a well-known architect and botanist, read a paper before the Horticultural Society, on January 15, 1833, in which he states that the timber of the sessile Oak has less silver grain than that of the pedunculate Oak, and is frequently mistaken for timber of *Castanea vesca*, as in the roof of Westminster Hall.

Growing naturally where there is plenty of water in the soil, the pedunculate Oak produces acorns at the ends of long, tapering peduncles, which protrude beyond the foliage of the tree. They are thus prevented from receiving too plentiful a supply of water, while they can transpire freely in their exposed position, and do not thus retain too much water in their tissues. On the other hand, the sessile position of the acorns of the sessile Oak, and the fact that they are sheltered by the foliage, enable them to draw and retain sufficient water from the twigs, which are drier than those of the pedunculate Oak.

The necessity for protecting the water supply to acorns is very clearly exhibited by the Turkey Oak,* *Quercus Cerris*, a tree that grows naturally in a hot, dry climate. The acorns of this Oak grow from carpels, that are formed a year before they develop into fruits, and remain inconspicuous until they are shaded by a fresh year's shoot with its foliage; they then begin to swell into mature acorns. The acorns of the Turkey Oak are thus situated on two years' old wood and obtain sufficient water, while, when ripening, they are sheltered from excessive transpiration by the numerous bracts on their cups.

From the above description of the two Oaks, it is evident that the pedunculate is naturally adapted to a very wet soil, while the sessile will thrive in comparatively dry situations, and this is always true of the two species.

Lands subject to inundations along the rivers Rhine and Danube produce splendid pedunculate Oaks, which may also be seen growing to perfection in the French State Forest of S. Amand, near Valenciennes, in the valley of the river Scheldt. When growing naturally in hilly or mountainous districts, the pedunculate Oak is confined to the banks of streams, or to the neighbourhood of wet places. Mere heavy rainfall, that is not retained by the soil, is not sufficient for the pedunculate Oak, as near Lake Vyrnwy in Wales, with about 60 inches of rainfall, or in hilly districts in the département de l'Orne, in France, with nearly 40 inches, sessile Oak predominating in both localities.

Sessile Oak thrives in the dry regions of the Spessart, in the Harz mountains, Norway, and on hills and plateaux in France. It also predominates over the pedunculate on the poor heather lands of North Germany. The sessile Oak may be seen to perfection in the forest of Bellême, in the north-west of France, at about 700 feet above sea-level. Hedgerows in the lower lands, near this forest contain numbers of pollard pedunculate Oaks, and no sessile Oaks. I recently measured a sessile Oak in the forest of Bellême that was 146 feet high, with 113 feet of bole, and a girth at chest height of 9 feet 10 inches. Its volume is about 500 cubic feet.

There is so little natural Oak forest left in Britain that the distinctive preference of each species for certain localities has been obscured by plantations, chiefly made of pedunculate Oak. Seedsmen have usually supplied acorns under the ambiguous name *Quercus Robur*, which generally means pedunculate Oak, the acorns of which are most easily procurable, from trees grown in the open; hence the presence of this species in localities like the Peak, for which it is thoroughly unsuited.

Naturally grown sessile Oaks are still to be found in the forest of Dean, in Wales, and in the high lands of the north of England and south of Scotland; it is highly important that only this species should be planted on well-drained or hot hilly land. The pedunculate species should be confined to places where the subsoil always contains abundant moisture. The fact that the sessile is more susceptible to frost than the pedunculate should also exclude the former from low, damp, and frosty situations, where the pedunculate Oak, sprouting later in the spring, may frequently be grown with impunity, provided that nurses are supplied for the young

plants, and the stems of the older trees sheltered by Hornbeam underwood, as in Epping Forest.

Both these Oaks prefer a deep, moist soil, containing a certain amount of clay, and the hardest and most durable timber is produced by the pedunculate Oak on clay soils; but Oaks will also attain large dimensions, though with a softer wood, on a sandy soil that is well supplied with water by capillarity. As a rule, where Oaks are grown, the water should be chiefly in the subsoil; but the pedunculate Oak thrives on lands that may be flooded for several weeks annually, and the best Bosnian Oak timber is produced under these conditions.

As regards the comparative quality of the timber produced by either Oak, it may be laid down as an axiom, "that the superior value of English Oak depends on its vigorous and rapid growth, which frequently exceeds that from the north of Europe by ten to one."* As a rule, this rapidly grown timber is taken from pedunculate Oak standards over coppice, growing on wet land. The sessile Oak is usually grown with Beech on hilly land, and its rate of growth is only moderate, or even slow, consequently, apart from any inherent difference in the structure of the wood of either species, sessile Oak-timber is usually softer and of less specific gravity than well grown pedunculate Oak-timber, although it is far superior to the latter when grown in unsuitable localities. It is also usually less durable than the latter, and is chiefly used for the internal fittings of buildings and railway-carriages, or for cabinet-making. *W. R. Fisher.*

OPUNTIA MYRIACANTHA.

DR. A. WEBER has sent me some further notes on this Cactus, a figure of which appeared in the *Gard. Chron.* for March 24, 1900. His remarks arose out of another communication of mine appearing in the *Gard. Chron.*, July 7, 1900, in which I reproduced James Douglas' account of a Cactus, in the Galapagos Islands, from 40 to 50 feet high. Dr. Weber suggests that Douglas' Cactus and *Opuntia myriacantha* are identical, and I think his reasons are convincing. In the first place, he says that I was wrong in describing the flowers of *D. myriacantha* as small for the genus; and on making further comparisons, I agree with him. He originally described the flowers as 2 inches in diameter, which is certainly not less than they are in several other species. He now informs me that *O. myriacantha* has flowered profusely this season at Villefranche, and fully-expanded flowers measured 7 centimetres (2¾ inches) in diameter. Douglas described his Cactus as having large, bright yellow flowers, and very long, flexible spines. Dr. Weber has sent me some petals and spines of *O. myriacantha*, which answer this description very well; and he goes on to say that their plant produced upwards of 100 flowers this year; and as they grow in tufts, they are exceedingly effective. *W. Botting Hemsley.*

ORCHID NOTES AND GLEANINGS.

LÆLIA DAYANA.

THIS species was considered by some persons to be merely a form of *L. pumila*, but now it is generally acknowledged to be a species. The flowers are of a bright purplish-rose colour, like those of *L. pumila*; the anterior margin of the side lobes of the lip, and the front portion, are of a rich claret colour. The principal distinguishing feature consists in the raised purple lines running from the base of the lip to the front. Some good plants of *L. Dayana* are in flower in Mr. H. A. Tracy's nurseries, Amyand Park Road, Twickenham, where it is grown in a light, airy, intermediate-house. It was first found in Brazil by Mr. Boxall in 1876, when collecting for Messrs. Hugh Low & Co.

* Quoted from Mr. Knight, President of the Horticultural Society, *Gardeners' Chronicle*, February 5, 1842.

LÆLIA PUMILA.

This species varies a good deal in the size and colour of its flowers; and only in recent years was the best type to be found in any quantity in British gardens. Messrs. Stanley, Ashton & Co., of Southgate, were fortunate in discovering the habitat of the best large-flowered form a few years ago, since which time it has formed a showy object in their nurseries in late summer and autumn. The large, broad-petalled flowers vary in the intensity of their colours, and all are beautiful. The majority have sepals, petals, and tube of the lip of a bright purplish-rose colour; and the front and edges of the side lobes of a bright purplish-crimson. Considering the dwarf habit of the plant, the flowers are extraordinarily large and showy. At Southgate, the best results are obtained by planting it in hanging Orchid-pans, placed near the glass in an intermediate-house; the house is freely ventilated, and afforded shade only when the sun is very bright. A number of species of Brazilian *Oncidiums*, *Cattleya Loddigesii*, *C. bicolor*, *C. granulosa*, &c., are also in flower at this nursery, these plants being special introductions of the firm.

NURSERY NOTES.

WM. CLIBRAN & SON, ALTRINCHAM.

THE increased hold that horticulture has obtained upon the sympathies of the people of this country during the last quarter of the closing century is strikingly illustrated by the extraordinary development that has taken place in some of the larger nurseries during the same period. The firm of W. Clibran & Son is a capital instance of very a large business which has been brought to its present dimensions and importance by rapid progression.

When we had the pleasure to visit the Oldfield Nurseries recently, we were informed that as late as the year 1872 this nursery consisted of a few acres of ground and one greenhouse only—now there are nearly 5 acres covered with glass; there are more than 200 acres of out-of-door stock. The firm employs nearly 300 persons, and the yearly wage bill has been increased until it is 200 times more than in 1872. Having stayed in Manchester on the previous night, we were able to reach Altrincham station early in the morning by fast train, and at once commenced an inspection of the Oldfield and several smaller nurseries. There was so much to be seen, however, and the variety was so great, that we shall not attempt to do more than reproduce a few notes then taken upon some of the more interesting and important features in this extensive establishment.

Mr. Clibran being away from home at the time, we found an excellent guide in Mr. Thos. Lewis, to whom much of the direction of the practical work in the nursery is entrusted.

THE INDOOR DEPARTMENT.

Having already mentioned the extent of glass-houses, it will be readily understood that they must contain an enormous number of plants. We first looked into a warm stove, and found a considerable collection of *Codiaeums* there, including some varieties which were originally distributed by this firm, such as *A. Pettigrew*, with leaves of moderate width, and deep yellow in colour; *Daviesii*, a spreading variety, of handsome appearance, leaves 1½ inches wide, petiole red, mid-rib white, and the surface of the leaf green, laced with creamy-white; *Mrs. Clibran*, a very charming, narrow-leaved variety, just suitable for the ornamentation of the dinner-table, colour deep red and yellow; *Golden Chain*, in some respects similar to *Mrs. Clibran*, but the graceful leaves are much longer, and there is less red colour in them; and *Mrs. Lewis*, with golden-yellow coloured leaves, rather less narrow than those of *Mrs. Clibran*.

In the same structure could be seen a grand lot

* This tree is too often planted; its timber is worthless, and it is surpassed in beauty by several American Oaks, that yield useful timber.



FIG. 63.—VIEW OF ROCKERY IN THE OLDFIELD NURSERIES, ALTRINCHAM. (SEE P. 222.)



FIG. 64.—VIEW IN THE BEGONIA HOUSE AT THE OLDFIELD NURSERIES, ALTRINCHAM. (SEE P. 222.)

of plants of that elegant decorative plant, *Aralia Veitchii*, and many other stove species with ornamental foliage that we must not particularise, save the *Cordylines*. A large stock of these of the best varieties is grown, and there were noticed several unnamed seedlings of much merit. One of these had narrow, richly-coloured leaves, with rolled, but wavy margins, and much recurved points; another was of a type quite different, being freer in habit, and the narrow leaves were bronzy-green, with red-coloured margins. This would make an excellent "table" plant.

It was evident from the contents of this and adjoining houses that the warmth-loving climbers and trailers are given considerable attention; amongst a large stock of these were seen nice plants of *Allamanda cathartica* [grandiflora], a pretty species, but not the easiest to cultivate successfully; *Arauja* (*Schubertia*) *grandiflora*, a plant that produces white, sweetly-scented flowers, and well worth cultivating; *Clerodendron splendens speciosissimum*, an orange scarlet-flowered evergreen trailer, that blooms during the whole year; and a large number of *Passifloras*, &c. Next was noticed *Pentas carnea*, and a batch of *Caladiums*. In another house were some nice plants of *Clethra arborea*, and several of the finer *Acacias*, the stock plants of *A. pubescens* and other species now being of considerable size and age. Palms are cultivated in large numbers for the supply of private gardens, &c.

A house, 200 feet long, and 25 feet wide, was quite filled with tuberous-rooted *Begonias* in pots. There were many thousands of them, and an immense amount of seed might be taken from them. The flowers showed a capital strain, and we have the opportunity to give some idea of their appearance by reproducing a photograph taken of the interior of this house (see fig. 64, p. 221).

There is a large stock of Ferns in several spacious houses, and a number of uncommonly fine plants of the handsome *Adiantum tenerum* Farleyense. In other houses we much admired a capital strain of *Celosia pyramidalis*, with beautiful, feathery plumes of various shades of colour; zonal *Pelargoniums*, yellow and white-flowered *Richardias*, *Bouvardias*, *Petunias*, *Eucharis*, and *Urceocharis Clibrani*, a hybrid figured in the *Gardeners' Chronicle*, 1892, vol. xii., p. 292. All of these plants, excepting the hybrid, are cultivated in very large quantities, as also are Cockscombs. Special mention should be made of a new strain of Cockscomb, with pink or light rose-coloured flowers; they are distinct in shade from any we have noticed.

Cupressus funebris in pots makes a charming table plant, being of graceful habit, and a particularly delicate shade of green colour. A house 220 feet long is used for forcing plants, bulbs, &c., for sale at the business premises in Manchester. There were many pot Vines just completing their growth; and numbers of miscellaneous species of plants that we must pass without comment, and conclude our remarks upon the indoor department by a reference to the Roses in pots, which are raised each year in very considerable quantities. Most of them were just finishing growth for the present season in a house 200 feet long by 20 feet. About 1,500 plants are the stock raised this year, and most of them have grown to about 9 feet high, and are strong and sturdy. It is surprising that a few well-known varieties should be required in the numbers they are, and others of equal merit asked for but occasionally.

HARDY FLOWERING PLANTS AND FRUIT-TREES.

Hardy herbaceous and other perennial flowering plants occupy a considerable space at Oldfield, the collection of such plants being very comprehensive. There were not very many in bloom, however, at the time of our visit, if we except the *Dahlias*, which were commencing to make a great show, and the *Hollyhocks* (*Allegheny* strain), which were in capital condition. The somewhat difficult but admirable *Tropaeolum speciosum* was growing and

flowering in the freest manner possible; and the golden-leaved *Hop* made several pretty garlands amongst the beds. Our attention was called to a new variety of the dwarf *Lobelia* to be known as Mrs. Clibran. Its characteristics are an uncommonly erect habit of growth and flowering, very large individual flowers, and its height is about five inches, and colour of the flowers purple. A variety of the double *Arabis alpina* named *Snowdrift*, is said to have more persistent flowers than the type, and a variety of *Genista tinctorum* known as *elator*, which we were fortunate to see in bloom, is a great improvement upon the type, having stronger flower spikes and larger blossoms. The newer varieties of the shrubby *Phloxes* were well represented, and some of them were already in bloom.

Upon the rockery (see fig. 63, p. 221) there are cultivated numbers of the choicest Alpine plants, but their beauty is offered to visitors in spring rather than in August. Most of the blossoms to be seen were those of *Yucca filamentosa*. The collection of Alpines, however, appeared to be rich in *Campanula* species, and *Ramondia pyrenaica*, *R. p. alba*, and other equally fine plants for cultivation upon the rockery were noticed.

Fruit-trees occupy something like fifty acres of land, and all kinds are cultivated. The majority of the trees are growing at Hale Nurseries, a short drive from Oldfield, and there we saw an excellent lot of trees of Apples, Pears, Plums, Peaches, Cherries, also batches of Raspberries, Strawberries, Gooseberries, and Currants. The trees are trained in all the common methods, and they are free-growing, clean-barked, healthy specimens, but rather short-jointed, owing to less quick growth than are fruit-trees cultivated in more southern counties. The Peaches appeared to us to be remarkably good, both the standards and dwarfs, and the stock was a large one. Cherries, too, had made a grand growth this season, and the one and two years old Apple and Pear-trees are all that could be desired. The soil being a nice sandy loam, they make a large quantity of good, fibrous roots.

TREES AND SHRUBS, &c.

At the Hale and Cemetery Nurseries also there are thousands of trees and shrubs, including the choicer species of Conifers, such as *Cedrus atlantica glauca*, *Retinosporas*, Junipers, *Thuias*, *Cupressus Nutkaensis* and other species, *Abies pungens glauca*, &c.; but there is another collection of Conifers, consisting chiefly of the larger-growing species, at the Stamford Nursery, which is near to Bowdon, in Cheshire, and is eight or ten acres in extent. The soil there is also sandy loam resting upon the red sandstone formation, and Conifers succeed in it capitally.

At the same place there is a number of glass-houses containing market varieties of Ferns, and a quantity of plants of the fragrant *Luculia gratisima*. Reverting for a moment to the trees and shrubs in the nurseries in and about Altrincham, the *Hollies* which flourish grandly deserve special mention, and are of many diverse varieties, differing in leaf from the largest smooth-leaved form, to that of the very formidable-looking hedgehog variety; there are capital pyramids and bushes in stock.

It is a question whether gardeners make all the use they might do of the Holly as a decorative plant upon lawns. It has no chance to be effective if planted in the ordinary "very mixed" shrubbery, where the outlines of any particular species can seldom be discerned; but if a nicely-trained pyramid is planted in the grass as a specimen, and in a position where it may grow evenly all round, the Holly may still hold its own amongst the increased number of ornamental shrubs that in these days are at the planter's disposal. The golden-leaved *Catalpa* (*C. bignonioides aurea*) is very effective in any landscape, and it was in these nurseries. Messrs. Clibran have a grand lot of Larches, especially the Japanese species, *Larix leptolepis*, sometimes known as *L. japonica*, and which possesses a graceful, spreading habit and

drooping branchlets, and in colour is of a pleasing light shade of green. Plants 5 feet high, and of considerable breadth, had a very charming effect.

At a place called Carrington, the stock consists chiefly of *Rhododendrons*, and altogether there are about 25 acres of these showy hardy shrubs, in which an endeavour is made to include all the best varieties obtainable. Golden-leaved *Elders*, *Willows*, and *Privet*, too, are largely cultivated there.

At Llandudno the firm has a nursery, where Tea Roses are found to grow especially well, and an extensive and up-to-date collection is maintained there. In addition to the Roses, there are many species of hardy plants that are naturally more or less of maritime habitats, and are grown at present at Llandudno, where they succeed best. At Bangor, in the High Street, the firm has a branch where a considerable trade is done in all details of a seed and nursery business.

The seed trial-grounds are at Urmston, a suburb of Manchester, this being the ground where all the firm's agricultural and horticultural seeds are carefully tested. The agricultural seeds are stored, and orders are executed from 85, Water Street, Manchester; and at 10, Market Street, the garden seed and bulb trade is conducted. Number 12, Market Street is entirely devoted to a florists' business, and in the city of Manchester there is considerable business of this nature to be done, so that at Cromfield Court a staff of male and female florists is always engaged in making up flowers.

The growth of Messrs. Clibran's business responsibilities has indeed been unusually rapid.

RUDBECKIA FULGIDA.

FROM the flowers which I have seen of this, it looks as if it would be one of the best of the *Rudbeckias* for late bloom, although it has not the neat habit of *R. speciosa*; still, it is one of the best of our autumn Composites. It differs considerably from *R. speciosa*, not only in its foliage, but also in the shade of yellow of its flowers, and in its broader and shorter ray-petals. It is more orange-yellow than *speciosa*, and if the two are placed together, it will be found that *R. fulgida* is the more effective, though smaller flower, and perhaps less elegant in the form of its rays. Both have the centre of that deep, almost black, colour, which gives such a character to the flower. Nominally, *R. fulgida* ought to flower in October and November, but it anticipates that time considerably in some gardens, as might be seen by the flowers shown by Mr. Porter, Lord Ashtown's gardener, at the Dublin Show on August 28. It is one of the flowers which is likely to be wanted in the future, wherever plants growing from 3 to 4 feet high can be used with advantage. It varies in stature in its native habitats in the United States from 1 to 3 feet, and it is not unlikely that dwarfer forms will appear in gardens, either from seed or as the result of a dry soil, such as it seems to prefer at home. *S. Arnott, Dumfries.*

IRELAND.

POTATO DISEASE.

WE may safely assume that the Potato crop will be an unquestionable failure; the rampant spread of the disease has been considerable, and fears of a repetition of the failure of 1847 may be realised without engaging in horoscope casting, but wishing that the worst may be averted. The question of spraying as a preventive is scarcely entertained, the air of doubt regarding its efficacy hangs like a cloud over our cultivators, and the attitude of indifference assumed by them cannot be entirely blamed, as they have been misled by the use of the Bordeaux Mixtures as supplied by the trade under the appellation of "Blight Powders," which have since been proved to be worthless (*vide* Mr. Moss, F.L.C., pamphlet on *Copper Preparations for Spraying Potatoes*, p. 117).

the chief objection being its non-efficacy, owing its poor power of adhesiveness to the foliage, so that a heavy rainfall will wash it off; whilst the art of spraying, namely, whether the under-part or top of the foliage should be sprayed [both. Ed.], either together or separately, is undetermined. Possibly the burning of the haulm is worth consideration as a preventive. Instead of the Board of Agriculture issuing reports on these preventives (based on the advice of the Botanical Department), they would experiment in different localities, somewhat similar to the efforts of Dr. Halstedt in America in dealing

extensive scale on their land in Kent, with excellent results. See *Gardeners' Chronicle*, p. 158, August 6, 1892; also "Irish Experiments," in issue for December 17, same year. Ed.]

CULTURAL MEMORANDA.

BOUGAINVILLEAS.

DURING the autumn attention should be paid to the thorough ripening of the shoots. This process is best brought about by withholding water gradu-

Much bottom-heat should be avoided, but a little artificial warmth is helpful, though not essential to the plants. If cold frames are employed, I place them in a full south position, and the back of the frame is raised to allow all the sunlight possible to shine on the glass. Before removing the plants, I take care that the soil about the roots is thoroughly moistened; they are then lifted carefully with a spade, and put side by side upon a hand-barrow, and immediately removed for planting. The plants are given as much room in the frame as it is thought they will require, and when all are planted, water is afforded, the lights are put on, and a moderate amount of shade applied for a few days. The glass is then removed altogether, except it be unusually wet weather, or the nights are very cold. *H. Markham, Wrotham Park Gardens.*

PLATYCODON GRANDIFLORUM SEMI-DUPLEX.

THIS pretty semi-double flowered variety of the Chinese Bell-flower was shown by Mr. Bain, gardener to Sir Trevor Lawrence, Bart., at the Royal Horticultural Society's Meeting, held at the Drill Hall, Westminster, on August 28 of the present year. The flowers, of deep blue tint, are 3 inches in diameter; the anthers and stigma white, and the leaves as in the type. The plant was honoured with a First-class Certificate on this occasion. *Platycodon grandiflorum* has, in some places on the continent, been taken up as a market plant, but not, we believe, with marked success, its culture entailing some difficulties, and these would also be likely to beset the cultivation of its partly double-flowered variety.

PLANT NOTES.

LYCHNIS CORSICA.

DURING the last two summers beds of this beautiful pink *Lychnis* have been the most admired objects in the interesting gardens of Joseph Broome, Esq., Sunny Hill, Llandudno, and all who saw the plants pronounced them to be new to them. It appeared in Mr. Broome's garden among other annuals, and being very pretty and different to anything which had ever been grown in the garden before, the seeds were saved, and the result is that this year several beds were planted with seedlings derived from the original stock. The plant grows from 2 to 3 feet high, the wiry branching stems are densely set with flowers somewhat resembling some of the alpine Pinks. The colour is pale pink at first, changing to bright pink, and when passing off they assume a reddish hue. The profusion of the flowers, their constant succession, and their varying tints, serve to add to the attractions of the plant. But little appears to be known of it in gardens, and not until he had submitted it to the Director of the Royal Gardens, Kew, could it be determined. It is said to be identical with *Lychnis Loiseleurii*. *J. O'B.*

LINUM CHAMISSONIS.

This charming little plant, with yellow flowers and bright scarlet-hued buds, comes from the same region in South America as *Lathyrus magellanicus*, and like that plant is not hardy in my garden. It, however, ripens seed and comes readily from cuttings, so there is no difficulty in keeping it. In the cold clay soil here it remains quite dwarf. Doubtless in the south it would make a much larger plant. *A. K. Bulley, Neston, Cheshire.*

THE ANNUAL DINNER of the members and friends of the United Horticultural Benefit and Provident Society, writes Mr. COLLINS (Secretary), will take place at the Holborn Restaurant, on Wednesday, October 10, at 6.30 P.M. The chair will be taken by Mr. GEORGE MONRO. We trust there will be a good company present.

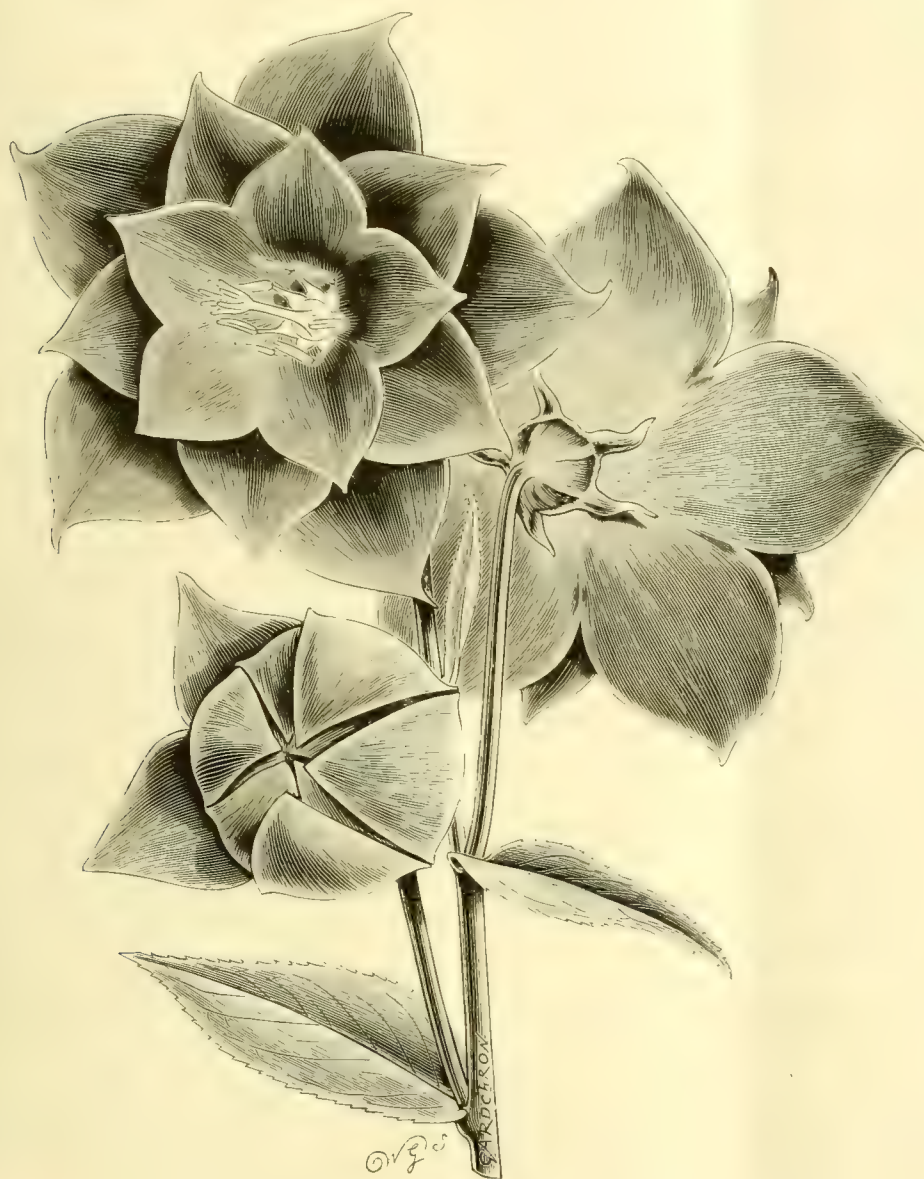


FIG. 65.—PLATYCODON GRANDIFLORUM, SEMI-DUPLEX.

with the Lettuce disease (*vide* a current number of *American Gardening*), by placing soil where infected tubers were known to be; then get land yet unbroken—to use a more popular term, uncultivated—and place a portion of the soil, containing morbid conditions, on different patches, and induce, as far as possible, the development of the disease, and report results; also spraying in every conceivable manner, and grow the so-called disease-resisting varieties. Let the failures and successes be equally reported, and the possibility of effectually controlling the disease may then come within the sphere of practical conception. *A. O'N.* [Spraying diseased and healthy Potato haulm was tried by Messrs. J. Carter & Co., of High Holborn, on an

ally from the soil and affording air freely. Just enough water should be afforded as will keep the foliage and bark from shrivelling; and the whole ball of soil should not be wetted, or the plant will recommence to grow, which is most undesirable. *H. T. M.*

THE CULTURE OF VIOLETS IN PITS.

It is good practice to thoroughly clean the pits and frames to be used for this purpose, and to put into them about 6 inches of sweet soil, and well-decayed manure. This should be brought up to within a few inches of the glass by previously placing in the pits a quantity of tree-leaves and stable-litter, which is made very firm by treading.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Routine-work.—The weather of the present month has retarded the growth and establishment of freshly-planted Cabbages, Kales, &c., for unless water can be afforded copiously, they will not have made much progress before cold weather sets in. Better afford one or two copious applications of water each week than dribble daily. The hoe should be used frequently between the rows of Cabbages, Turnips, and autumn-sown Onions. Soot sprinkled along the rows of the latter, and moderate applications of some approved fertiliser, will assist the plants. Water should still be afforded Runner and French Beans in dry weather.

Spinach.—The earliest sowings should be partially thinned, the final thinning being performed in about a fortnight later, when the plants should be left at about 10 inches apart; but if the position is exposed, the space may be less. It is prudent to thin twice, wireworms and slugs sometimes committing serious ravages among the Spinach-plants. As a deterrent to these visitants, apply dressings of fresh soot and lime. Successional sowings of Spinach seed having been made by this time, the soot and lime dressings may be occasionally applied to these also.

Celery.—Until the end of the present month, the plants intended for use late in October should be moulded up for the last time, if the plants are sufficiently advanced, otherwise the operation should be deferred, as the close contact of the soil somewhat arrests growth. Before the last moulding is begun, apply water or liquid-manure liberally, the latter by preference. When affording either, it is very important that the soil should be saturated so that the water reaches the bottom of the trench.

Tomatos.—Those plants which are growing in the open air should be relieved of all fruits that are partly ripe, placing them on a dry shelf in ainery till they become fit for use. All surplus and lateral shoots should be removed from the plants. Where provision has been made for a crop of fruit to be ready for use in the autumn, have them placed under glass, and afford them a degree of warmth not less than 60° at night. For the next few weeks the air of the structure should be kept in a genial buoyant state day and night, rather dry than moist, and air admitted whenever the days are favourable. The amount of water afforded should be enough and no more. The pots may be afforded a mulch of stable-dung or bone-meal.

Endive.—The first sowings should now be transplanted to a warm border facing south. The bed having been manured and dug deeply, should the weather be mild for the next month, Endive will soon form hearts, and when of full size they may be blanched in various methods where they are standing. Although the round-leaved Batavian Endive is the hardest of them all, frame protection should be afforded the winter supply, or much loss will occur among those that are tied up for blanching; plants under a south wall, if allowed to remain green, will stand much frost without injury.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Dendrobium Phalaenopsis Schrodarianum and others. —In most gardens this superb *Dendrobium* having ceased to grow, will now be in flower, and until the flowers have passed, a certain amount of moisture will need to be afforded at the roots of the plants. To preserve the blossoms from spotting, keep the atmosphere of the house moderately dry, and do but little damping down. In proportion as the plants pass out of bloom, so decrease the quantity of water afforded them, and by mid-winter, when the bulbs have thoroughly matured they will not require any. During the dull season the plants will need all the light and heat that the warmest house affords. Always examine any plants freshly imported for traces of the much-dreaded beetle that sometimes infests them, and if any plants are found to be affected with it burn them at once. *D. bigibbum*, *D. Statterianum*, *D. Leeanum*, *D. Gouldianum*, and others of this section, require treatment similar to that described above. *D. formosum* now com-

mencing to flower will require very little water to keep the pseudo-bulbs in a sound condition. Suspend this plant when in bloom in a moderately dry sunny atmosphere. *D. albo-sanguineum* having been cultivated during the summer in a shady part of the stove should now be removed to full sunshine, and less water need be given the roots now that the pseudo-bulbs have attained their full size. *D. spectabile* also will need little water, but as the flower-spikes are now showing, the plants should not be kept dry. *D. atrovillosum* has finished growth, and should be removed to a lighter situation in the warm-house, where it needs to be afforded sufficient water only to keep the pseudo-bulbs firm.

Loelia monophylla.—This pretty scarlet-flowered species deserves more general cultivation. Being a native of Jamaica, it succeeds best here in the intermediate-house. The plants should be cultivated in shallow, well-drained pans, and suspended in a shady portion of the house. Growth has now nearly finished, and the plants will need but little water. If there be much material around the roots, and it be kept very damp, decay is liable to occur.

Some Epidendrums.—*E. vitellinum* has completed its leaves and pseudo-bulbs, but the roots will be active for some time. Do not apply large quantities of water to the plants unless it can get away rapidly; neither keep them in a close atmosphere, but near to the glass in a cool-house. *E. macrochilum*, now developing its growths, requires a light position in a Cattleya-house, and the rooting material to be kept just moist. *E. Wallisii*, *E. Endresii*, and the hybrid from these two species, thrive at the cooler end of the Cattleya-house. Keep them moderately moist, and free from insects. *E. nemorale* and *E. prismatocarpum* require a light, dry position in the Cattleya-house. Do not let any water lodge in the growths of either of these species. *Barkerias*, or, as they are now called, *Epidendrums*, are developing their flower-spikes. They require much light and air, and a moderate quantity of water until the leaves fall away, when none whatever should be afforded before growth commences the following season. *E. (Nanodes) Medusie* requires moisture at its base all the year through, and as it grows along with the *Masdevallias*, the moist atmosphere prevents it becoming frequently dry.

The Temperatures of the various departments should now be permitted to decline. The cool-houses may still be chiefly supported by natural warmth, but the warmer ones will of necessity need more fire-heat. It is necessary to warn cultivators repeatedly against using more fire-heat than necessary at this season of the year, when plant-life is approaching a period of rest. Employ just sufficient to support the temperatures required, and no more, a low temperature that can be easily raised being preferable to a high one that has to be diminished early in the day.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

The Apricot.—The crops having been gathered from the trees in nearly all parts of England, the opportunity is favourable for effecting the pruning of the fruit-spurs, or those that will form fruit-spurs, thinning the branches and young shoots. Although the giving of advice on such matters may appear unseasonable to many, it is not so in reality, as owing to the tree being in active growth, wounds heal quickly; and gumming, which nearly always follows hard-pruning in winter, is avoided. I would therefore advise that aged yet healthy trees, on which the spurs project far from the face of the wall, be forthwith thinned out. In some gardens these spurs are very long, and carry fruits of only medium quality. Quite half of their number may be removed. Those which are retained can be dealt with in the course of the next two years. It is not advisable to cut-back aged spurs close to the branches, but to leave a stump of about an inch in length, from which buds will push the following spring; and even if they should not, some dormant buds are generally existent on the main branches, which seldom fail to break after the spurs are shortened back. If required, these can be utilised for forming new spurs. When it is seen that the cut-back spurs refuse to break, prune them away. By following this method I have clothed old trees afresh with new spurs in about three years, and at the present

time am engaged in treating some here in the manner described. In dealing with trees overcrowded with branches, the thinning should be spread over at the least two years. In the first year the most exhausted branches should be removed; or if there are not many of these, remove branches where there is the most crowding. Where more shoots were laid in during the summer than there is now space for, these should be reduced in number. Top-dressing the roots with a rich compost is a great assistance to trees that have to be severely dealt with in the manner indicated, for which instructions were given in the Calendar for September 15.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Ilchester, Abbotsbury Castle, Dorsetshire.

Hedges of Privet, Thorn, Ilex, Euonymus, and Fuchsias should now be neatly trimmed. In the warmer parts along the south coast *Fuchsia Riccartoni*, if grown as a bush or as a hedge-plant, will flower well into the winter if this year's growth be now cut back to two or three buds, the plants growing again and flowering readily. Matured shoots will also strike freely if placed in sandy soil in rows in the open ground at 15 inches apart. Cuttings taken with a heel are the best. Plant them in little trenches made with a spade, burying them to the depth of 6 inches, and making the soil firm about them. A mulch of leaf-mould may be put on the ground before cold weather sets in.

The Lawn.—The lawn, now that worms come freely to the surface, should be frequently swept when dry, and the roller applied before any mowing is done.

Cotyledon (Echeveria) secunda glauca.—If a quantity of these neat edging plants will be required for planting next season, preparations had better be made at once for wintering them. A pit or frame that can be made proof against frost will afford them sufficient protection. They should not be planted in very rich soil at this season. Put a good layer of $\frac{1}{2}$ -inch coal-ashes at the bottom, and upon this may be placed a compost of finely-sifted leaf-mould two parts, coarse grit one part, and a little soot. The plants will need an abundance of fresh air, and this may be afforded them by tilting or removing the lights during bright weather. If this be not done, damping will be sure to occur. When taking up *Echeverias*, it is best to divide the plants and offsets into three grades. First the parent plants; second, the larger suckers; and third, the smaller ones. Remove all the dead leaves and other refuse from the plants, and cut off the ragged ends of suckers squarely, but keep some of the roots where possible. Any plants that have been injured by grubs should be burned. The older plants sometimes require shortening back severely, which is a great help. In making up the soil in the frames, let the surface slope from north to south, so that the plants may get all the sunlight possible. It will prevent also water from standing long upon the plants, and this is very necessary. Plant them closely in straight rows, and apply water thoroughly afterwards, which should be sufficient for them until the new year.

Hardy Dwarf Edging Plants, such as *Sedums*, *Saxifragas*, *Arenarias*, *Cerastiums*, *Ajuga reptans*, and others, may now be divided and planted out in spare borders where the soil is somewhat light, raising the soil a little above the general level. Choose for planting small, compact tufts which have some healthy roots. Plant them rather thickly in rows.

Gladiolus that were planted out early may now be lifted. The older corms should have some of the soil removed from them, and each sort should be kept true to name by means of labels. If the corms be placed upon a layer of powdered charcoal in trays, and kept upon shelves in an airy apartment, they will not be likely to suffer. The young brood should be kept for further cultivation.

Propagating.—Secure cuttings of such useful but tender climbing plants as *Cobæa scandens*, *Tropæolum Lobbianum*, *Maurandya Barclayana*, &c. Take short, stocky cuttings, and insert them in pots in rich sandy soil, and place in a warm propagating-house; pot them off immediately they have become strongly rooted, and when well established, place them in a position where they will receive much sunlight. Examine *Perlargonium*-cuttings, and remove decayed leaves from them. Prepare sufficient space indoors in readiness to receive these cuttings, so that they may be housed expeditiously.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

The Melon.—The weather has been favourable to the growth of Melons recently planted out. As soon as the blossoms begin to appear on the plants generally, the ventilation may be slightly increased, and a little more heat afforded till fertilisation has taken place in a sufficient number of the flowers. Let the growths be stopped and thinned, so as to force the sap to the young fruits, and when a sufficient number of the latter is set, remove the remainder, after selecting four of the likeliest fruits on each plant. This stage being reached, a more liberal treatment should be afforded, syringing the plants on fine sunny mornings, closing the house or pit early in the afternoon, with a syringing of the foliage if the day has been sunny throughout, and letting the temperature rise to 90° with sun-heat. It should sink to 70°, but not lower, by 8 P.M. In syringing and affording water, let no water touch the stems in quantity. Where the fruit on Melon-plants grown in frames is fast developing, the air of the frames must not be rendered very moist, water being afforded only on bright mornings, and not in the afternoon. Attention should be paid to stopping and removing redundant growths at short intervals of time, and to elevating the fruits, so that the sun shines on them. Where the bottom-heat of the bed is not less than 65°, no fresh linings will be required, otherwise new or partly new linings must be applied. Before doing this, it is prudent to press the soil of the bed firmly round the sides of the frames, in order to prevent the products of fermentation entering the frames. It will now be advisable to lay a double thickness of mats on the frames at night.

Cucumbers.—No time should be lost in planting out Cucumber plants, which will supply the winter fruit; or, if that is inconvenient, planting them in large pots, so that no check to growth is caused. Soils which are of an adhesive nature should not be employed, but a rather rich turfy loam, together with a small quantity of leaf-mould and road-scrappings or coarse sand. The bottom-heat of the bed should range from 70° to 75°, and the temperature of the house from fire-heat alone may be identical. When the roots have permeated the soil of the bed generally, weak liquid-manure may be afforded, as well as a dressing of horse-droppings one-third, and loam two-thirds. Keep the air humid by damping-down frequently; and ventilate the house freely on sunny days. Plants in bearing should be kept in a fruiting state as long as possible at this season, in order not to distress the winter plants by cropping them heavily. This will be ensured by affording the bearing plants frequent top-dressings, removing exhausted bine, and thinning the fruits when too many have set.

Tomatos.—The plants intended to provide winter fruit being well established, with fruits in course of development, may now be afforded rather less air; and the blossoms should be fertilised by hand daily, using a soft brush or a feather in distributing the pollen. When affording air, except in warm sunny weather, the heating apparatus should be used, and by night it will usually be required. The house for the present should not be quite closed at night, slight currents of air favouring the setting of the flowers, and tending to keep the plants free from diseases. The removal of side-growths should receive frequent attention.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

Miscellaneous Species.—Remove the covering from Freesias, and apply water very sparingly until the leaves have developed. Keep them quite cool, and afford ample ventilation; as any forcing at this stage would produce weedy-looking plants and weak flower-stems. Zonal Pelargoniums should now be covered at night, or the damp atmosphere will retard the ripening of the shoots so essential for successful winter flowering. Some of the plants may now be permitted to flower, and the flower buds should not be removed from the remainder after this month has ended. Any Bouvardias or Salvias not yet potted-up should have some light covering put over them at night; and the lifting of all tender plants in the open ground should be proceeded with. Cold foggy nights have commenced earlier than usual.

Camellias.—The plants if heavily set with flower-buds may be disbudded, leaving those on the leading shoots, but removing them from the side-shoots. If a small piece of the shoot is removed when taking the expanded flowers, sufficient pruning is done to keep the crown compact. The leaves may now be sponged with clear water, or rubbed with a dry cloth, and the plants tied into shape. See that plants growing in tubs and pots get well supplied with water at the root, and those planted out in borders with a sprinkling of bone-meal, afterwards affording them a copious application of water.

Chrysanthemums, &c., possessing flower-buds in a forward state, should be brought under glass, and preparation made for removing all of the plants indoors, or where protection can be afforded them. Heaths, Boronias, Sollyas, and new Holland plants generally, which have been standing in coal-ash beds, should be brought under cover.

Rose-house.—The pruning of the plants trained on the roof should now be undertaken, weakly and blind shoots being removed, and long ones of the Noisette and Tea sections tied in, the unripened ends of shoots being the only parts cut off. The border may be afforded manure-water in quantity. In the afternoon let the Roses be well syringed and the house closed. No firing will be necessary for the present, unless the night temperature cannot be kept at from 55° to 60°, when heat may be applied late in the evening. Celine Forestier, Homère, Catherine Mermet, and Niphetos, are very nice, free-flowering varieties for the Rose-house when planted out, and they may, if it be desired, be got into flower by the end of the year.

Solanums.—The plants of the berried variety, potted up from the open ground should be afforded water plentifully in order to settle the soil about the roots, syringed overhead daily twice, shaded from bright sunshine, and kept close for two or three weeks, otherwise the plants may cast their leaves. When completely re-established, the points of the shoots should be pinched out once, unless lengthy ones are liked, when no pinching should be done. Well coloured shoots of Coleus struck at this date singly in 60's, soon make plants suitable for a variety of purposes. Let them be grown in a sunny position. Carnations should be provided with supports and removed to cold pits or frames; the Marguerite varieties should be freely disbudded and assisted with manure-water, which will have the effect of prolonging the production of flowers.

THE APIARY.

By EXPERT.

Feeding driven Stocks.—This should be done as quickly as possible, and when a few full frames of honey can be spared from an old stock they should be placed with the driven ones, thus affording them a great help; but on no account rob one lot to feed another, if they can poorly bear it. In feeding driven bees, place on a rapid feeder (this can be bought of any dealer for 2s. or 3s.); or if you cannot do this, secure a quantity of jam-bottles holding about 3 to 4 lb. each, fill with syrup, and after tying over with a bit of butter-cloth, place them on the top of the hive, seeing firstly that the hive is level, and secondly that a piece of perforated zinc be placed over the frames to keep the bees down, otherwise you will experience a considerable amount of trouble every time you refill the bottles. This should be always done in the early morning, or late at night, and no syrup should be left about, as it would encourage the bees to rob. Keep a tin of carbolic-powder handy to sprinkle the entrance as soon as robbing commences. Care should be taken to examine the hive, and see that the bees have no place to get in other than the entrance, or you will soon have your stock troubled with wasps. In making syrup, proceed as follows, and always use the best loaf-sugar; the inferior qualities are very injurious to bees.

No. 1 Salicylic acid solution.—For mixing syrup for feeding bees, painting over hives, and spraying combs, &c., for the prevention and cure of foul brood, salicylic acid, 1 oz.; soda borax, 1 oz.; water, 4 pints; Hilbert's solution, pure alcohol, 8 oz.; salicylic acid, 1 oz.

Spring and Summer food for bees.—White lump-sugar, 10 lb.; water, 7 pints; vinegar, 1 oz.; salicylic acid solution No. 1, 1 oz.; salt, 1 oz. Boil for a few minutes.

Autumn food for Bees.—White lump-sugar, 10 lb.; water, 5 pints; vinegar, 1 oz.; salicylic acid No. 1, 1 oz.; salt, ½ oz. Boil for a few minutes. All hives, floor boards, and frames that have been in use should be thoroughly scalded and cleansed before they are used again. The winter is a convenient time for doing this, so that they may be ready for use again in the spring. In addition, they should be washed over with salicylic acid solution, the recipe of which I have given. This will check the propagation of foul brood, by preventing the development of any germs of the disease which may be present. All empty hives, &c., which have been put away should also be fumigated or sprayed with this solution before they are used again. The solution is inexpensive, and the prudent beekeeper will be well repaid for the simple precautions he may take to prevent the introduction of foul brood into his apiary. In any case, precaution is better than cure. It will pay the beekeeper to examine his hives and destroy all wax moths, as they breed so rapidly, and may destroy all the combs in the hives, and the bees in consequence will be starved out. To prevent this happening, a little naphthaline may be used in every hive at the back, and on quilted-leaking roofs. All roofs should be repainted and repaired to keep out the rain and heavy dews, as bees must be kept as dry as possible. Close all entrances so that only one bee can pass in at a time.

VARIORUM.

CULTIVATING FERNS ON BRICK.—Since Nature is the giver of all that is beautiful, florists perhaps more than any other class of men may derive the greatest benefits by more closely observing and applying her laws. In many instances we fail to gain the best results from the skilled culture and scientific growing of plants, because it savours too much of the artificial, and utterly disregards the natural. Especially is this true in the cultivation of Ferns, which the increasing demand of late years has made it necessary to devise a means of propagation in a manner that will insure the best development by the most practical methods. A true lover of nature and close observer, wandering in the dense forests of a mountainous country, finds the most delicate varieties of Ferns growing and flourishing in the crevices of rocks. Contrary to this, in the forests of a low, flat country, abundant in decayed wood, we find Ferns of a stronger, coarser growth luxuriantly developed. In the solid brick walls of the old-fashioned, half-span green-houses of European countries, where the mortar has fallen out, I have found the finest varieties of the Adiantum family growing. This fact, coupled with the close resemblance to the porous nature of rock, confirmed my belief that the cultivation of Ferns on brick would be both possible and practical. After several successful trials I submit this article, in which I will endeavour to give a lucid explanation of the methods which I have found practical in this particular mode of cultivation, with the hope that it may prove of interest to some of your readers. Take a galvanized iron or tin pan, 50 inches long, 10 inches wide, and 1 inch deep. Thoroughly cleanse one dozen common bricks, 8 × 4 × 2, and place in the pan. Cover them entirely with a thin layer of soil procured from the decayed trunks of hardwood trees, sifted through a fine wire sieve. Sow the spores very thinly on top of this, and fill the pan with rain-water. I am particular about the water, since hard water contains mineral matter which would close the pores of the brick. Place pan on the north side of a Rose or Palm-house, close to wall, and entirely enclose with glass plates set on an incline. Keep the pan constantly filled with water, in the shade, in a temperature of 60° to 70°. In closing my article I wish to call the attention of busy florists especially to two points: dirt cannot be swept off by syringing, nor plants damaged by over-watering. Plants grown in this thin layer of soil can be easily and readily peeled off and removed without injury to roots. I have found the Adiantum family especially adapted to this manner of growing. C. M. H., *The Weekly Florists' Review* Chicago, August 16, 1900.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPT. 25.	Royal Horticultural Society's Committee. Paris Exhibition (Temporary Show).
THURSDAY, SEPT. 27.	Royal Horticultural Society's Show of Fruits at the Crystal Palace (three days).

SALES.

EVERY DAY.—Dutch Bulbs, at Protheroe & Morris' Rooms.
MONDAY, SEPT. 24.—Bulbs, at Messrs. Stevens' Rooms.

TUESDAY, SEPT. 25.—Clearance Sale of Plants, Orchids, &c., at 28, Allyn Park, West Dulwich, by order of J. A. Causton, Esq., by Protheroe & Morris, at half-past 12 o'clock.

WEDNESDAY, SEPT. 26.—Established Orchids, at The Ferneries, Uxbridge, by Protheroe & Morris, at half-past 12 o'clock. Bulbs, at Messrs. Stevens' Rooms.

FRIDAY, SEPT. 28.—Imported and Established Orchids, at Protheroe & Morris' Rooms. Great Sale of Palm Seeds, Lilium Harrisii, Roman Hyacinths, &c., at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—57°.

ACTUAL TEMPERATURES:—

LONDON.—September 19 (6 P.M.): Max. 70°; Min. 52°.

Weather warm and genial; but the nights were cool.

PROVINCES.—September 19 (6 P.M.): Max. 69°, Oxford; Min., 53°, Shetland.

Fostering Floriculture.

THE Corporation of Glasgow have this season inaugurated a scheme, the result of which will no doubt be watched with keen interest by all lovers of flowers who hail with satisfaction an attempt made towards relieving the monotone of a drab centre of industrialism. It has been made with a view to fostering floriculture among the working-classes, and to that end, as an experiment, the Corporation some time ago decided to distribute throughout the main thoroughfares of the city five hundred window flower-boxes filled with plants in full bloom. In this respect, however, Glasgow merely adopted the suggestion from Liverpool, whose Corporation has the honour of having been the originator of the scheme. That city four years ago tentatively began with the distribution of three hundred such boxes amongst cottagers whose weekly rental did not exceed five shillings. When the idea was first mooted, it was greeted with criticism favourable and adverse, but so popular did it become last year that the number of boxes had to be increased to nearly two thousand. To give an outline of the working of the system in the city on the Mersey, it may be explained that early in the spring a man specially selected from the Parks Department, is sent over the poorer districts to note the various streets in which he thinks there is a reasonable chance of the plants thriving. For convenience, the city is divided into four sections, and a list of the streets in each, with the number of boxes proposed to be distributed amongst them, is made out and submitted to the sub-committee in charge for their approval. After the number is agreed upon, the man goes over the streets again, and arranges with the tenants who are agreeable to allow boxes to be placed in their windows, and who promise to give them due attention. These are noted, and the number of boxes prepared accordingly.

About the beginning of June, the boxes are sent out and fixed in position by men from the Parks Department. The leading men in each section gives the tenants verbal directions how to treat the plants, and during the season a weekly visit is paid to each street to see that none of the boxes is neglected. It says much for the Liverpoolians that the plants are generally well attended to, and that very rarely does a box go a missing. To encourage the cottagers to give proper attention to their

boxes, a series of prizes, ranging from a florin to half-a-sovereign, is given for the best kept plants; the funds for this purpose being raised by members of the Corporation and others interested in the movement, the amount so subscribed last season reaching over £40. In Liverpool, as the boxes are all placed outside the windows of the first floor, uniformity is attained, while the bit of colour gives a tone of refinement which is too often wanting amidst the dwellings of the poor.

In Glasgow, however, where artisans dwellings are of the tenemental order, this arrangement was of course impossible, the boxes having to be placed one and even two storeys above the level of the street, an arrangement which does not so readily lend itself to display as in England. When first invited to send in applications for boxes, the Glasgow public either misunderstood the scheme, or did not quite grasp its scope, for the number which put in for them was disappointingly small. A second invitation, however, had the desired effect of clearing out the 500, which were, as already stated, fixed in position. The plants used principally were Fuchsias, Pelargoniums, Marguerites, Calceolarias, Mignonette, and Musk, the total value of the box and its contents being estimated at 5s.

Instead of verbal instructions being given, each tenant receives a neatly-printed card, on which are hints necessary to the proper management of the plants; and on delivery, the householder gives a deposit of a shilling on each box—a sum which is repaid when it is removed in October. The annual rental which qualifies for the receipt of a box must not exceed twenty pounds. Though five hundred boxes cannot be expected to afford much of a display in so large an area as is represented by the three streets chosen for their distribution by the Corporation, yet it is an experiment merely, and if successful, will be developed and expanded next year, when, with the inauguration of the great International Exhibition in May, every effort will, of course, be made to enliven the streets of the city.

It may be added that the whole of the work entailed has been overtaken by the staff of the Parks Department, under the able direction of Superintendent JAMES WHITTON, a horticulturist of great experience, whose fame is by no means purely local.

VIEW IN THE GARDEN OF THE HOTEL DU PARC AT CANNES (Supplement).—Our illustration shows a part of the gardens belonging to the Hôtel du Parc. On the left hand is seen a part of the new hotel, whilst the building with the two towers was formerly the castle of the Duke of VALLAMBROSA, who sold the same to its present owner, Mr. ELLMER, the proprietor of the hotel. The new hotel is attached to the castle, which has been enlarged and improved, the whole now forms one magnificent building. The terrace in front of the castle is overgrown with creepers, and there are some fine specimens of *Phoenix dactylifera* growing on it. Under the terrace is the entrance to a grotto which is planted with *Ficus repens*, Palms, and a great number of plants of *Aspidistra*. This was once used as a store for cycles during the season, but it has been rebuilt as a billiard saloon. The plant on the left hand side of the view threw up a magnificent spike, and is *Agave Vallambrosa*, whilst the other on the right is an *Agave ferox*. The latter flowered a year later, and both were splendid specimens, but since flowering they have died. The Palm on the right hand is a *Phoenix dactylifera*, up which a plant of the Banksian Rose is trained. The buttress behind the

electric lamp is also covered with Banksian Rose, *Ficus repens*, and Bignonias, and are all growing most luxuriously.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on Tuesday, September 25, in the Drill Hall, Buckingham Gate, Westminster. At 3 o'clock a lecture on "Saving and Using the Rain," will be given by Mr. PETER KAY.

—The great annual show of British-grown fruits will be opened at the Crystal Palace on Thursday next, September 27, and be continued during the two following days. On each day of the show, Fellows of the Society, on producing their tickets will be admitted free to the Palace at 10 A.M. It should be remembered that the Society's Committees will not sit at this show. All fruits for Certificate must be exhibited at one of the fortnightly meetings at the Drill Hall.

PROFESSOR DR. L. WITTMACK celebrated his twenty-fifth years' service as general secretary to the Vereines zur Beforderung des Gartenbaues in the Prussian States on June 20 last.

PROFESSOR JEAN OCTAVE ED. PERRIER becomes Director of the Natural History Museum in Paris in succession to the late MILNE EDWARDS.

BARON SIR HENRY SCHREDER, who possesses so admirable a collection of Orchids at The Dell, near Egham, has celebrated during the present week the occasion of his golden wedding. Our readers will join us in congratulating Sir HENRY and Lady SCHREDER upon this happy event.

THE LATE MR. J. R. JEFFERIES.—The interment of the late Mr. JEFFERIES, of the firm of RANSOMES, SIMS & JEFFERIES, the well known implement manufacturers of Ipswich, took place on the 16th inst., at the Ipswich Cemetery.

THE NATIONAL DAHLIA SOCIETY'S COMMITTEE, we may remind our readers, will meet at 12 o'clock at the Drill Hall, Westminster, on Tuesday next, to award Certificates to such seedling Dahlias as may be deemed worthy. Entries should be made to the Hon. Secretary at the Drill Hall, before 11.30 A.M., on the morning of the show.

UNITED STATES EXPORT TRADE IN PLANTS, ETC.—The value of plants, shrubs, trees and flower roots entered into the United Kingdom from the United States for the last four years is as follows: In 1896, £18,922 (89,261 dols.); in 1897, £18,373; in 1898, £13,395; and in 1899, £15,505 (75,364 dols.). It will thus be seen that the value represented was smaller each successive year till the last, when an increase is recorded, but not of sufficient magnitude to catch up with the value of the year preceding (1897). The actual decrease in the four years is about 17 per cent., which set against an actual increase in the total imports of such stock by the United Kingdom of a trifle over 11 per cent. The relation of the American trade to the whole volume is about 3 per cent. only. Holland naturally claims the largest share, with France, Belgium and Germany following in the order named. As the figures given refer to values only, it is possible that the actual volume of trade has not so greatly decreased as may appear at first sight, for the fluctuations in the values of stock must be borne in mind.

CINNAMON ADULTERATED WITH GUAVA BARK.—The Austrian *Pharmaceutical Journal* states on the authority of the *Svensk. Farm. Tidskr.* that Cinnamon is adulterated with the bark of *Psidium Guajava*. The dried bark is soaked in Cinnamon-water, dried, and both ends of the quill touched up with a Cinnamon-oil, to impart the flavour and aroma of the true bark. The quills are then either passed off as a substitute for Cinnamon, or they are mixed with the true spice.

TSUGA CANADENSIS VAR. PENDULA.—This dwarf variety of the Hemlock Spruce, known in American gardens as *Tsuga canadensis* Sargentii

pendula, is a bush that extends laterally, with horizontal branches and pendulous twigs. This peculiar variety was found in 1870, in several examples, growing near Fishkill, on the Hudson River, in the State of New York, and was distributed by H. W. SARGENT among several of the Fishkill gardens. The plant was put into commerce by Messrs. PARSONS & SONS. An example of this variety, growing on its own roots, is to be found in the garden of Professor C. S. SARGENT, to whom it came shortly after its discovery. This plant is now 1.20 metre high, and 3½ metres in diameter. The age of this plant is about thirty years. This variety of Hemlock Spruce is a capital subject for planting on a lawn, especially at corners where short cuts are apt to be made by pedestrians, being better fitted for such a purpose than *Juniperus tamariscifolia*, which is sometimes used, it being of rather higher growth. There are two good figures of the plant in *Möller's Deutsche Gärtner Zeitung*, for August 18, 1900.

POLYGONUM BALDSCHUANICUM.—Judged merely as a garden plant, this species is not the acquisition some of our correspondents expected it to be. One of them writes: "There is no particular merit in this plant to warrant the high price—7s. 6d.—charged for it. I have it in flower from two distinct sources, but it is inferior to the native *P. bistorta*."

THE LATE MR. B. R. CANT.—We understand that a movement is on foot to institute a memorial to commemorate the regard in which this distinguished rosarian was held by his brethren in the craft, on the same lines on which the GEORGE PRINCE Memorial prize was founded. The Very Rev. the Dean of ROCHESTER, the Rev. A. FOSTER-MELLAR, the Messrs. CHARLES J. GRAHAME, GEORGE PAUL, GEORGE PRINCE, and others, have already signified their intention of contributing to the fund. Contributions will be gladly received by the Hon. Secretaries, Rev. H. HONYWOOD D'OMBRAIN, Westwell Vicarage, Ashford, Kent; or EDWARD MAWLEY, Esq., Rosebank, Berkhamsted.

ADAMS' HYBRID GLADIOLUS.—We remark in the August-September number of the *Wiener Illustrierte Garten Zeitung* a coloured plate of some new hybrids of Gladiolus that arrest attention by the beauty of their colouring and the large size of the blooms. We have the same expanded form as seen in Gladiolus Nanceianus, and in beauty they seem to excel them. Herr FRANZ ADAMS is head gardener at Mauer, near Vienna.

FRAGRANCE OF FLOWERS.—In the *Wiener Illustrierte Garten Zeitung*, we find a systematic arrangement of the odours of flowers by FR. DELPINO, in which he divides them into two great groups—the sympathetic and idiopathic. The first named group is defined as that of which the members are most visited by insects, whilst the other group consists of those flowers to which most insects have an antipathy. The first group falls into three classes with twenty-six species; the second into two classes and nineteen species. The three classes of the first group are named the sweet, the aromatic, and the fruit odours. The two classes of the idiopathic group are the unpleasant, and the disgusting odours. KERNER, in his *Pflanzenleben*, vol. ii., states the different flower odours to number 500, which he divides into five groups, viz., indoloide, aminoide, paraffinoide, benzoloide, and turpenoide. KERNER'S division has the advantage over DELPINO'S, inasmuch as he takes particular notice of the chemical constituents of the substances which afford the odour, and his opinions have a scientific basis.

A BAVARIAN GARDEN FOR ALPINE PLANTS.—At Schachensee, in the Bavarian Alps, at an elevation of 1,500 metres, an alpine garden has been laid out and planted by a foreman of the Munich Botanical Garden of the name of OBERST, and the work is nearing its completion. The plan

and outlines of the work were furnished by the University Professor, Dr. GÜBEL. The land is the property of the Crown. It is intended next year to build a block-house, and furnish it with the necessary comforts for the use of scientific visitors. Alpine gardens already exist near Innsbrück, in the Dauphiny, in Italy, and on the Maritime Alps. This Bavarian garden will be the means of rescuing the finest alpsines from annihilation.

FLOWERS IN SEASON.—Some flowers of *Streptocarpus* reach us from Messrs. JOHN LAING & SONS, Forest Hill Nurseries, London, S.E. They represent a very free-flowering, valuable strain that Messrs. LAING have named "multiflorus," and they vary in shades of colour from nearly pure white to very deep purple.

PUBLICATIONS RECEIVED.—*Bibby's Quarterly*, price 3d. A capital periodical for anyone engaged in Agricultural pursuits, Horse or Cattle breeding, or rearing Poultry, &c. It is full of reliable information, and contains a large number of photographic reproductions, of which those showing the different breeds of Cattle, &c., are worthy every praise.—*The English Flower Garden and Home Grounds*, by W. Robinson; published by John Murray, 50a, Albemarle St., London. Price, 15s.—*Proceedings of the Academy of Natural Sciences of Philadelphia, U.S.A.*, 1900. Part January and February, published at the Academy of Natural Sciences, Logan Square, Philadelphia.—The last eight months' issues of the *Journal of the Department of Agriculture, Western Australia*. Paragon Printing Works, 105, Murray Street, Perth.—*The Supply of the Halles Centrales de Paris in 1899 with Fruit and Vegetables*, by MM. D. Bois et G. Gibault; published at the printing office de la Cour d'Appel.—*Agricultural Journal of the Cape of Good Hope*, for August 16, 1900.—*The Monthly Review* (John Murray, Albemarle Street, Piccadilly).

THE WEATHER IN WEST HERTS.

DURING the ten days previous to the 14th, there was a marked difference between the lowest and highest shade temperatures; in fact, on one day the range in temperature amounted to as much as 36°; since then, however, both the days and nights have been singularly warm for the time of year, so that these differences have not been nearly as great. On the hottest day the highest reading was 77°, or about 12° warmer than is seasonable. The changes in the night temperatures have been considerable; for instance, on the coldest night the exposed thermometer fell to within 3° of the freezing-point, but three nights afterwards the lowest reading was as unseasonably warm. The last few days, owing to the warmer nights, the underground temperatures have risen, and at 2 feet and 1 foot deep are respectively 3° and 4° higher than their September averages. No rain worth mentioning has now fallen since the end of August, and no rain-water at all has come through the bare soil percolation gauge since August 2. During the last three weeks the weather has been remarkably calm, the average rate of movement of the air at thirty feet above the ground being less than two miles an hour. Besides being calm, the atmosphere has been unusually dry in the middle of the day, the mean percentage of humidity at 3 P.M., being 59, whereas the average at that hour for the time of year would be about 66 per cent. Since the month began the sun has shone brightly on an average for six and a quarter hours a day, and on three days the record amounted to ten hours. *E. M., Berkhamsted, September 18.*

CHEMICALS FOR HORTICULTURAL PURPOSES.

I HAVE read with interest the letters in your Journal from Mr. Chas. T. Druery and "Horticulture," as to the very considerable public inconvenience that has arisen, owing to the recently asserted claim by chemists and druggists for a monopoly in the retailing of the "XL-All" Insecticide, and other similar chemical preparations for horticultural and agricultural purposes, upon the ground that they contain poisonous ingredients scheduled under the Pharmacy Act, 1868, and therefore allowed to be sold in small quantities by pharmacists only.

"Horticulture" is perfectly correct in his contention, that the Act in question was merely passed to prevent unqualified persons compounding and dispensing scheduled poisons for medicinal administration or employment. It was certainly never intended to interfere in any way with the old established and highly important industry in horticultural and in agricultural chemicals previously so satisfactorily and so conveniently carried on by seedsmen, florists, &c., a class of tradesmen who, from their long and daily connection with the retail trade in such preparations, have rendered themselves practical and reliable experts as to the industrial merits of the various specialties of this description, introduced from time to time to the notice of horticulturists and agriculturists. This qualification, the majority of chemists and druggists certainly do not possess.

For the information of "Horticulture" and of others who may be still ignorant of the fact, I may state that a special Protection Society has been recently organised upon behalf of horticulturists, florists, and other traders interested in this industry, and with the object of bringing about a speedy amendment of the Act of Parliament, under which the present unjustifiable monopoly has been rendered possible. An active and influential committee has been formed, explanatory circulars have been and are being issued, and a carefully-prepared Bill has been drafted for early presentation to the legislature to effect the end in view; numerous petitions in favour thereof being in course of signature throughout the country.

I shall have pleasure in receiving the name and address of any gentleman willing to join the committee, or to assist either with a subscription or with personal influence.

Copies of the proposed Bill and of the Petition in support thereof, together with any further information upon the subject may be had upon application to me. *T. G. Dobbs, Secretary, The Traders in Poisons or Poisonous Compounds for Technical or Trade Purposes Protection Society, 5, Clement's Inn, Strand, London, W.C.*

THE BRITISH ASSOCIATION.

(Continued from p. 213.)

On the occasion of the resumed meeting of the Association on Friday, September 7, the botanical section met in the Friends' Meeting House, and the chair was again taken by Dr. D. H. Scott, Vice-President.

Dr. F. F. Blackman read a paper prepared by himself and Miss Matthæi on "The Effect of the Closure of Stomata on Assimilation." Dr. Blackman pointed out that the stomata of most leaves possess the power of closing when the leaf is exposed to dry air. The plant thus protects itself from injurious loss of water vapour. It becomes interesting to determine what effect this closing of the stomata has upon the assimilation performed by green cells in light, upon which process the whole nutrition of the plant depends. It is known from the author's previous work that all the carbon dioxide from the air which the leaf uses up in assimilation passes into it through the stomatal openings. Should dry air cause these openings to close, then assimilation from lack of carbon dioxide would fall into complete abeyance. By exact experimental determinations, this, Dr. Blackman said, is found to be the case, and by artificially drying the air, assimilation can be entirely prevented. In the antagonism between the tendency to close produced by the dryness and the tendency to open produced by light, the former gains the upper hand, and it pays the plant to starve for the time rather than to be dried up. Some marsh plants, not running any natural risk of drying up, have no power of closing their stomata. If these be exposed to artificially dried air they rapidly lose water, but nevertheless, they are found to continue to assimilate with considerable activity. Thus, a leaf which has been gently dried for thirty-six hours, and has lost half its weight, may yet assimilate half as much as a fresh leaf kept moist. This unexpected result has important bearings.

In a second paper Dr. Blackman criticised the general idea that there is an "optimal" tension of carbon dioxide for assimilation. He first gave results which showed that the amount of carbon dioxide synthesised by a green cell in a given time is a function only of the amount of light-energy which it is then absorbing. This was shown to hold for a considerable range of intensity of light. Should the tension of carbon dioxide to which these lighted cells are exposed not cause sufficient of that gas to diffuse into them, then some of the energy will be wasted, having nothing to act upon. Increasing the tension increases the assimilation up to the limit determined by the amount of energy available. A very

high tension may cause very much more carbon dioxide to diffuse in, but this no longer increases assimilation when once the rigid limit fixed by the energy has been reached; so that it can never be strictly said that a tension of carbon dioxide is an "optimal" one in the sense in which "optimal" can be applied to other controlling conditions.

Professor Letts made a communication respecting the investigations made by himself and Mr. John Hawthorn, of Queen's College, Belfast, on the sea-weed, *Ulva latissima*, and its relation to the pollution of sea-water by sewage. Professor Letts pointed out that for a number of years past a very serious nuisance had arisen from the sloblands of the upper reaches of Belfast Lough during the summer months, the stench at low tide being quite overpowering, and the air heavily charged with sulphuretted hydrogen. A precisely similar nuisance, though not of the same magnitude, also arose from the sloblands in the northern portion of Dublin Bay. The nuisance was caused by deposits of the green sea-weed, called *Ulva latissima*, or Sea-lettuce, which in the two localities mentioned grew in abundance, and during high winds or gales was washed ashore. In Belfast Lough these deposits caused a great nuisance, owing to the rapid putrefaction that occurred.

The evidence tending to prove that the occurrence of the sea-weed in quantity in any locality was associated with sewage pollution was of three kinds—the amount of nitrogen it contained was far in excess of that of any other sea-weed of which analyses were recorded. The power of assimilating nitrogen which the weed possessed was ascertained and was found to be remarkably high, and, while the sea-weed was present in abundance in Belfast Lough, it was almost entirely absent from Strangford Lough, which was similar in area and in many other respects to Belfast Lough, but differed from it in not being extensively polluted by sewage. In Dublin Bay the sea-weed was found in quantity in the harbour, which was highly polluted, but not in the southern parts of the bay, which received no sewage—except near Kingstown, where a large sewage tank discharged on the ebb tide. There the weed occurred. The evidence which the authors had collected tended, therefore, to the conclusion that the occurrence of *Ulva latissima* in quantity in a given locality was an indication of sewage contamination, and there could be no doubt as to the power which the weed possessed of absorbing nitrogen compounds from polluted sea water. While thus acting as scavenger it might itself give rise to a very extensive nuisance.

On Saturday, September 8, the Botanical Section met again in the Friends' Meeting House. Dr. D. H. Scott, vice-president, occupied the chair. The papers read was mostly the work of ladies.

The first was by Miss Ethel N. Thomas, on "Double Fertilization in a Dicotyledon"—a line of research which Miss Thomas has been one of the first to undertake.

Miss Ethel Sargent read a paper in which she discussed the changes which take place in the structure of a plant during transition; and described a fourth type of transition from stem to root-structure which she had found occurring in certain monocotyledonous seedlings.

A paper by Miss R. F. Shove (of Girton College) on the structure of the stem of a plant of *Angiopteris evecta* from Ceylon, was read by one of the secretaries in Miss Shove's absence.

Mr. A. G. Tansley read a paper describing investigations on the conducting tissues of Bryophytes, and attempting to trace out the course of evolution of these tissues.

Mr. W. C. Worrell read a paper on "The Origin of Modern Cycads," in which he expressed the view that these plants were derived directly from some palæozoic ancestors combining the characters of Ferns and Cycads.

The section then adjourned until Monday, September 10, when a joint discussion with the Geological section on the vegetation of the coal period took place. The whole of the morning of Monday was occupied by this section with the discussion, in conjunction with the Geological Section, on the conditions during the growth of the forests of the coal measures.

In the afternoon, Miss Dale read an interesting paper giving an account of further investigations on the intumescences of *Hibiscus vitifolius*. In the discussion which followed, Miss Dale was highly complimented on the value of her work.

Several papers were read on a variety of subjects of but little interest to our readers.

EREMURUS ROBUSTUS IN SCOTLAND.

IN fig. 66 we have reproduced a photograph taken by Miss M. J. Brand in her garden at Mylnefield, Dundee, which shows how finely this handsome species of *Eremurus* may be induced to grow and flower in that northern locality. Miss Brand kindly informs us that the plant this season produced nine flower-scapes, but that two of these were broken by wind. The plant has been at Mylnefield for five years, but it has only flowered regularly during the last three years, making fresh crowns every season. *E. robustus* is a native of Turkestan, and was introduced into this country in 1874. The flower-scapes are sometimes 8 feet in height, and the leaves nearly 3 feet long. The

numerous flowers are peach-coloured, and the species is an exceedingly choice plant for the hardy flower border. *E. himalaicus* and *E. Elwesii* are also very handsome plants. *E. robustus* was figured in *Bot. Mag.*, t. 6726.

AMERICAN NOTES.

SOCIETY OF AMERICAN FLORISTS.

THE sixteenth annual convention of the most truly representative body of working plantsmen of America was held in New York City, August 21 to 24, and was a rousing success. It is the second time that the empire city has had the annual gathering, and the memories of the former visit were not of the brightest. Thus, New York was

to the beach to catch a few sea-breezes whenever there is a chance to do so. Of course, to the out-of-town florist, the occasion was a great one; and he came in force with his wife and family, and revelled in the lavish hospitality of the New York Florists' Club, which, acting as host, stood sponsor for the enjoyment of the visitors. The club scored an enormous success, through many months of preliminary work and preparation, so that at the last there was no hitch whatever. A reception committee was appointed to meet incoming trains and steamers, and see to the proper housing of the delegates as well as their recreation during the visit. The chief entertainment was a trip by steamer to Glen Island, a famous resort, where the entire party—about 1,000—dined in fine style.

To Mr. Patrick O'Mara, the President of the Club, much credit is due; his power of direction, mastery of detail, and consummate tact, made him an invaluable man in that position. He was, during the meeting, elected as President of the National Society for the next year; and he will have on his hands a large share of the responsibility of making a good start in the new century. Next year's meeting will be held at Buffalo, N.Y., in connection with the great Pan-American Exposition, at which, by-the-by, the horticultural display promises to surpass all previous attempts on similar occasions—but that is another story.

Mr. P. O'Mara, the president-elect, is one of the best and most honourably-known figures in eastern floriculture to-day. As manager of the plant department of Peter Henderson & Co.'s business in New York city, he comes into contact with all persons interested in gardening. Although of Irish family, Mr. O'Mara was born in this country, and has been from boyhood upwards connected with the firm in which he now plays a leading part. Of his many general services to the trade, the most important are the securing of lower transportation rates for plants, and improved service for plant importers at the Custom Houses. He does at times take up a pen and illuminate the pages of the trade press, when his keen penetration and perception, together with skilful presentation of the facts and arguments, always serve an important end in the discussion. In short, Mr. O'Mara is a powerful factor in the business to-day, and his elevation to the post of honour is but a testimonial to his merit.

In the exhibition I noticed, among several displays of fancy-leaved *Caladiums*, one staged by their representative here (Mr. H. A. Bunyard) for Messrs. John Peed & Son: the collection was well grown, and represented the best varieties. Messrs. Sander & Co., of St. Albans, had offered a Cup for the most attractive trade exhibit, and some excitement existed until the award was announced. This class was adjudicated by former presidents, whose decision was not made known until a late period of the gathering. The fortunate winner was Mr. Julius Roehrs, Carlton Hill, N.J., who sent a great quantity of Palms, Orchids, large Bay trees, &c., all trade stock, in the perfection of cultivation. Mr. Roehrs is one of the largest growers of this class of stock, he has been a leader in Palms and Easter flowering-plants for some years past, and is rapidly becoming a large producer of Orchid blooms for market, a somewhat recent trade development which is fast growing in importance. An erect-habited form of *Nephrolepis exaltata*, which is also of a tougher texture, was noted: it is called by the raiser Wittboldi, and has a certain decorative value. One or two new varieties of zonal *Pelargonium*, and a *Canna* or two of a fine strain of dark claret red; *Petunia*, with star-like rays of white, embraced the other novelties. Mention should be made, however, of *Black Beauty Canna*, a bold-growing large-leaved form with very dark foliage. The trade display was under the management of J. P. Cleary, the well known auctioneer.

As a special feature of this convention, the private gardeners had set apart for them a large space in the centre of the floor—the best situation



FIG. 66.—*EREMURUS ROBUSTUS* GROWING IN MISS BRAND'S GARDEN AT DUNDRE.

on its metal: as the leading city of the Union, and as flavoured with unsavoury recollections, it set out to make a clean record, and right well did it too. The exhibition was the most truly representative and all-embracing that the country has yet seen; all branches of the trade rose to the occasion, so that the floor of the Grand Central Palace was crowded to its full capacity with high-grade trade stock of Palms, Ferns, Gladioli, specimen Coniferae, boilers, seeds, bulbs, and a host of sundries. Admission was free, yet for all that the attendance was slight, so far as the general public was concerned. It is never easy to get a crowd to a flower show here, it seems—less so, indeed, when it is free; and, lastly, it is a hard matter to get any attention at all in the month of August. The weather conditions are such that only those unfortunate mortals who have to, will stay in the city an hour longer than is necessary for the almost perfunctory routine of duty; and all who can, rush

of any indeed. It has often been said by the gardeners that the trade slighted them, and did not allow them a fair chance to take their proper places as exponents of other important places of horticulture. Well, they had their opportunity this time, and a solid few saved the reputations of many who "had better, or as good, at home." Mr. A. Herrington, Vice-President of the Florists' Club, had this department in hand, and through great effort, scored a success, of which he and New York may be proud; yet, for all that, the representation of the local craft was but moderate in regard to numbers. It was a remarkable display, and the support given clearly shows that the "S. A. F." is the one great representative body.

election, and its proceedings were of more than usual interest to English readers, since the new president is Mr. Herrington; he has been given a freer hand than any of his predecessors, and we await somewhat anxiously to see what he will do. There is scope for the society to work on more popular lines. So far it has not done much beyond establishing committees in the large cities for passing in novelties. A new president, and with E. Lonsdale of Philadelphia, Pa., as the new secretary, something more is likely to be attempted. One new step is that of offering a \$25 prize at the next show of the French Society.

The Carnation Society met for purely business matters; and the Hail Insurance, as usual, showed

The field touched upon is full of interest, and has great possibilities, and already the beginnings are to be seen; but I will reserve this for another letter.

Among the lectures, the most instructive were (1) that of Mr. Kift, on "Floral Decorations," in which he showed pictures on a screen of some of the best pieces of work in the chief cities, and made comments upon them; and (2) Prof. Galloway's "American Floriculture, Retrospective and Prospective." He considered that society and organisation work to be the most valuable aid in extending the interest in the art, and was in favour of any number of special societies co-operating with each other, and with a great national organisation such as the S. A. F. Dr. Britten, of the Botanical Garden, gave an illustrated lecture on the progress of that great institution.

In conclusion, mention must be made of the handsome Souvenir Book presented by the New York Florists' Club. It has a permanent value for the very full and interesting history of New York Horticulture, which was compiled by Mr. Alex. Wallace, editor of the *Florists' Exchange*. I happen to know something of the work he has had in order to get together the facts, which were not at all easy to dig out. And in this connection may also be named the *tour de force* of the weekly trade paper just named, which published a daily edition during the Convention, giving a full report of the preceding day's business. It was a great undertaking and well carried out. Leonard Barron, New York.

ANEMONE JAPONICA VAR. MONT ROSE.

At a meeting of the Committees of the Royal Horticultural Society on September 11, Messrs. W. Paul & Son, of the Waltham Cross Nurseries, exhibited a beautiful variety of the well-known autumn-flowering *Anemone japonica*. This was shown under the name of Mont Rose (fig. 67), and had semi-double flowers, nearly 4 inches across, and of pale mauve colour, a little deeper in colour at the tips of the petals. The leaves, as seen, were small, and of light green colour; but as the plant had been grown in a pot, the foliage may not have been quite characteristic. This variety will be valued for its very fine flowers, and the Award of Merit recommended by the Floral Committee was well deserved.

SELECTION.*

By HENRY L'EVEQUE VILMORIN.

(Concluded from p. 183.)

DIRECTION OF SELECTION.—The characters that have determined the selection of a certain plant have just been spoken of. It is understood that anyone engaged in the selection of plants or animals is selecting for the purpose of improvement. Man's efforts to modify a plant by means of selection, however, may be more less skillfully directed. Besides, the result obtained, though expressing exactly the breeder's ideal, may be very differently estimated according to the circumstances and the country. The ideal of a fruit, vegetable, or flower, varies greatly according to the tastes of different persons, and the influence of these different tastes must make itself felt in one way or another in the direction given to selection.

There are certain considerations of common sense that must be observed under all circumstances, which, if forgotten or disregarded, will lead to unfavourable results that will everywhere be recognised as such. It would be useless to attempt to unite in one and the same plant two characters which antagonise or interfere with the utility of each other. For instance certain very dwarf Beans are often widely advertised as producing pods of wonderful length. If the description is exact, and there is no reason to doubt that it is, the pods being longer than the stem that bears them, they would touch the ground and very often rot from contact with the damp soil. Common sense would show that very long pods should be borne by pole Beans, and that very dwarf varieties should bear short but numerous pods.

For several years very large flowers have been the fashion, and Pansies and Begonias are shown in which the flower is as large as the open hand. It has never been demonstrated that this is progress in a right direction. These flowers that are so large and abundant have not always the substance and stiffness necessary to hold them upright. The result is that they bend under the slightest unfavourable atmospheric changes or often even under their own weight, and frequently

Experiment Station Record, Washington, D.C., U.S.A.



FIG. 67.—ANEMONE JAPONICA "MONT ROSE": COLOUR OF THE FLOWERS PALE MAUVE.

It may perhaps be remembered by readers of the *Gardeners' Chronicle* that "and Ornamental Horticulturists" was added to the title but a couple of years ago; and though it has given some cause for amusement ever since, a proposition (by one of the most level-headed men in the Association) to remove it was opposed, and on a vote being taken, the members chose to adhere to the "S. A. F. O. H." as their designation. One member gave it as his opinion that the addition could not be improved upon, and that it was strictly correct. Of course, it is well recognised that the self-laudatory term is not good English; it should be "ornamentative." It stands, nevertheless.

Advantage is taken of so great a gathering of the craft to hold meetings of certain auxiliary societies. The Chrysanthemum Society held its annual

a still increasing business. The secretary reported an aggregate insurance upon 13,025,762 square feet of glass. He also reported cash balance on hand of \$6,823.44, and the total reserve fund as \$7,526.87. Upwards of 74,000 square feet of glass, broken by hail, was paid for by the association during the year.

The Rose Society does not officially meet on these occasions, but the subject was not forgotten in the preparation of the programme; and at the invitation of the executive committee, the Rose Society appointed a representative—Mr. E. G. Hill, Richmond, Ind., to open a discussion on Roses. This was a gracious compliment, and was much appreciated by the Rose Society. Mr. Hill dwelt upon the necessity of raising up a new class of garden Roses more resistant to the trials of our climate.

become much less beautiful than smaller but more substantial and numerous flowers. There is another instance of improvement, so called, which I am not alone in considering quite the opposite. There is a very pretty species of *Helianthus* (*H. cucumerifolius*) which is much esteemed in America and in Europe as a cut flower in summer. Its flowers, 3 or 4 inches in diameter, are of a pretty shape and superb golden colour relieved by a black centre. They are much sought after for sheaves and large bouquets. A florist has selected a variety called *Stella*, which produces a much smaller number of flowers, 6 inches or more in diameter, like those of small varieties of *H. annuus*. With the loss of its abundance of flowers, this plant has also lost the grace and lightness which constituted its especial merit.

The above example brings out a point that must be taken into consideration in selection. It is that there exist in Nature certain laws of equilibrium or of compensation that must be taken into account; as, for instance, the law that the size of the organs in any given variety of plant varies inversely as their number. The same variety does not produce both very large and very numerous flowers. This fact is especially noticeable in the cultivated *Cineraria* (*Senecio cruentus*). The flowers, which in the wild plant are scarcely as large as the flowers of the true Daisy (*Bellis perennis*), are usually bred to resemble those of the ox-eye Daisy (*Chrysanthemum leucanthemum*). This is not a wise application of selection. When of this size, the flowers that a well cultivated plant bears are no more than fifty or sixty in number. They cover the plant less completely than when they are a little smaller, but are 100 or 150 in number. The effect in the latter case is the more satisfactory. The details are lost in the mass of colour, and abortive or accidentally injured specimens do not break the solidity of the mass as when the flowers are individually of such size that the removal of one of them necessarily leaves a gap.

Neither can a plant be expected to be at once very productive and very early. Time is an element of considerable importance in the growth of plants. The plant that grows under favourable conditions of temperature and light for a month longer than another will necessarily produce a considerably greater weight of organic matter, but there are many cases which great earliness is an absolute condition of production. It is understood that under such conditions earliness is sought before anything else. It is a local necessity that must be taken into account. The problem of selection is almost always complicated with particular local requirements, and this explains the extreme multiplicity of cultivated varieties which certain people condemn without considering the reason for their existence.

The role of selection has been of the greatest importance in the past, as can be seen by the examples already cited. It will continue to be of immense importance in the future, for it is certain that mankind, in proportion as it increases in number, and takes possession more and more completely of the surface of the earth, will be obliged to obtain from it more and more of food and other useful products. To accomplish this, man must improve animals and plants, which are the instruments of organic production, just as he improves the implements and machines which are the instruments of industrial transformations. Moreover, mankind will be compelled to apply selection, not only to species already known, but also to those which are yet to be discovered.

Up to the present time selection has been applied particularly to annuals or biennials, plants in which generations follow each other rapidly. Under the management of corporate bodies, such as associations and local governments, it could be applied for example, to forest trees, in which the difference between the best and poorest specimens, as is well known, is extremely great. Since a well-established race of Sugar-beets has been obtained, why should not also a Cork-Oak be bred, the cork of which will be of rapid development and faultless texture? The value of such a cork would be double or treble that of the ordinary article.

HOW SHOULD SEED BE COLLECTED FROM PLANTS?

In concluding these notes on selection, it appears advisable to touch upon a point to which certain people attach great importance, but on which my opinion does not agree with that usually held. I refer to the custom of collecting seeds from some certain part of a plant in preference to another. There is no idea more prevalent in gardening than that of the superiority of seeds collected from the base of the central stem over those of the top of the same stem, and especially over those of the lateral branches. I have made and had made experiments on this subject, and I have invariably found no difference among the seeds collected from various parts of the same plant with respect to the proportion of single and double plants obtained. I have repeated these experiments many times on ornamental plants with respect to the doubling of flowers, on vegetables with respect to the size and quality of the roots, and on cereals with respect to the yield in weight, and the appearance of the seed, and I have always found that while individual plants may differ from each other in respect to the transmission of characters, yet from the same plant there was great uniformity of results obtained. The larger seeds produce slightly more vigorous plants in the earlier periods of growth, but do not give any guarantee of ability to transmit superior qualities. When a plant is known to be thoroughbred, and its ability to transmit its own characters has been established, I should always prefer the smallest seed that came from it, although collected from the part of the plant which is considered the least favourable in the common opinion, to the largest seed taken from the part believed to be the most favourable, of a plant whose pedigree is less certain.

CONCLUSIONS.

Selection is the surest and most powerful instrument that man possesses for the modification of living organisms.

Variations are easily induced by change of environment and cultivation. The latter is an addition of especial importance, because it permits variations which are spontaneously produced to be easily observed and selected.

These modifications may affect the external characters of form, shape, and colour, or the internal qualities of flavour, perfume, chemical composition, &c.

Selection may modify organisms in any direction not incompatible with the preservation of life, but there are certain characters that are mutually antagonistic: Individual size and number of parts, great productiveness and extreme earliness, relatively large size of a part, and very intense coloration. In order to be effective, selection must be continued in one and the same direction.

The value of the results obtained depends on the ability and judgment of the breeder. Varieties may degenerate as well as improve under selection.

The unit of selection is the individual. The superiority of one seed over others from the same individual, with respect to the transmission of characters, cannot be foretold.



HOME CORRESPONDENCE.

PTERIDIUM AQUILINUM!—It is a thousand pities that the botanists of the world cannot agree upon some rational general system of nomenclature, in which the fact of long continued popular use of a name shall be recognised as a reason for all-round adherence thereto. Surely *Pteris aquilina* is a name which is sufficiently established to be let alone; yet a newly observed fact in connection therewith gets perforce chronicled under another name as per heading, because it is recorded by a scientist who, doubtless for good reasons from his point of view, differs from the immense majority, starting with the great Linnæus himself. On reference to *Ferns, British and Foreign*, J. Smith, we find *P. aquilina* to be one of those happy Ferns which seem until now to have escaped the curse of synonymy. Why, then, should our American cousins endeavour to burden the plant with another name which radically has the same meaning, and simply introduces an additional element of confusion into lists and indices, which are already a chaotic puzzle. Recently in the *Fern Bulletin*, a most interesting quarterly American publication devoted to Ferns and Fern-lore, we were considerably puzzled by descriptions of various species of *Dryopteris*, which seemed curiously to tally with British *Lastreas*, and eventually after some study we were forced to the conclusion that this was a new or resuscitated synonym tacked on to the unfortunate genus which already groans under the burden of *Aspidium* (in conjunction with the *Polystichum*, which is an absurdity), and *Nephrodium* (a good name), and finally *Lastrea*, the name popularly accepted, botanists employing the first two in such a fashion that standard works employ them sometimes indiscriminately, writing under one synonym and illustrating under another, and sometimes the third. Challenging the policy of insistence in the States on this fourth name of *Dryopteris*, Prof. Lucien M. Underwood justifies it on the score of priority, the name having been given by Adanson, in 1763, to a genus characterised by having an "enveloppe en parasol" to its spores, to represent which he (Adanson) refers to *Filix-mas* or the common male Fern. Obviously therefore the very basis of the contention is rotten, for the male Fern (*Aspidium*, *Nephrodium*, or *Lastrea*) emphatically has a distinctly kidney-shaped indusium attached to its side like the rest of the genus *Nephrodium* or *Lastrea* (excluding *Aspidium*), which cannot possibly be termed an "enveloppe en parasol," which is the characteristic of the *Polystichum* family. This latter family, moreover, I do not think is embraced in the *Dryopteris*, though of this I am not certain: anyhow the name *Polystichum* figures in the *Bulletin*.

Priority here, as in many other instances, constitutes no adequate claim to use in preference to names of later and more appropriate application. It is a pure question of booklore *versus* practicality, and often we might just as well insist upon calling our old friend Smith by the name of Smythe, because in some edition of Chaucer's time the name is so spelt. Evolution comes in here as in everything else, and the survival of the fittest is certainly not always determined by resuscitation of by-gones, especially when, as in the case cited, the by-gones are fundamentally unfit. In the old days when communication between botanists and botanical centres was difficult, it is easy to understand how different authorities gave different names; but nowadays when communication is easy, surely some system might be introduced, some centre recognised, to which new plants might be referred, and the name there given universally adopted. Science is of no nation, or should not be; and in this particular direction the federation of the world has advanced farther than in any other. Hence, certainly, in the matter of nomenclature it should be competent for botanists generally to confer, and if they cannot rid themselves of the incubus of past nomenclature, at any rate to confine it to the past, and, then, starting fair prevent any new attempts at extension of the confusion now existent. *Chas. T. Drury, F.L.S., V.M.H.*

FRUITING OF THE JUDAS-TREE.—At Charlton House, Kent, the beautiful residence of Sir Spencer Maryon-Wilson, Bart., the common Judas-tree (*Cercis siliquastrum*) may just now be seen fruiting more freely than I have ever known to be the case. During this stage the tree is rendered curiously distinct and attractive, the seed-vessels, of a pale green, contrasting markedly with the darker green foliage. The Charlton trees, of which there are some half-a-dozen, are of unusual size, and during the spring months the almost leafless branches are thickly covered with a wealth of rosy-purple flowers. The seeds ripen freely, and young plants have been raised from them. *A. D. Webster.*

THE EFFECTS OF SALT SPRAY ON VEGETATION.—Some remarkable effects of the furious gale which was so generally experienced early in August can be seen along a considerable line of country parallel with the Great Western Railway, from Dumball right along almost to Weston-super-Mare. The winds blowing inland from Bridgewater Bay must have carried with them a very large amount of salt spray, for the trees and hedges-rows for a considerable distance inland are browned as if a fierce flame had passed over them. For some distance along the line it is possible on a fine day to catch glimpses of the glistening waters of the Bristol Channel, and it is at this point, where the line of coast between the railway and the sea is narrowest, that the effects of the spray are most felt. One looks in vain for tall trees—they are not to be seen. *R. D.*

THE FIELD CONVULVULUS.—Walking over some fields at Betchworth, Surrey, some weeks since, I could not do other every few steps than stop to admire the wonderful beauty as well as variations in colour, seen so profusely in the field *Convulvulus*. I thought that of all our flowering plants—and we have many that are singularly beautiful when in bloom—this creeping, but alas! pestilent weed, was the most beautiful. I very much doubt whether the farmer regards this plant with much sentiment; it is to him hardly a flower at all. Rather it is a troublesome pest. Happily, some of us have a little sentiment in our souls, and can admire and appreciate the beautiful, whether found in the gaudiest of tropical Orchids, or in the commonest of field weeds. I am not going to suggest that this *Convulvulus* should be grown in gardens; that, no one would advise. But it is so beautiful that I am tempted to ask whether it does not merit a place amongst hardy creepers in pots and vases? What have we in hardy plants in gardens that is of precisely the same character? Probably the favourite *Creeping-Jenny* is the nearest, yet is a long way lacking in the beauty found in the flowers, effective as it is, when facing window-boxes or draping vases. But if the *Lysimachia* is so charming for such purposes, why not the *Convulvulus arvensis*? Has anyone ever tried it in this way, or in pots, in brackets, or in any form which at least prevented its roots from getting into the open ground? I have never before

seen such varied hues in the flowers as I saw at Betchworth on somewhat strong ground. It may be that the stiff nature of the soil admitting of deep rooting tends to produce strong growths and rich colours. We have made *Calistegia pubescens* a useful garden plant, why not this pretty creeping *Convolvulus*? *Kingston*.

ANTIRRHINUM. I am sending you a flower of a very remarkable character, of which I have not seen the like before. Thinking at first that it had been damaged, but finding it in an uninjured state, I thought it might be of interest. It is a chance seedling, and it grew close to the path, so that I have observed it daily. *Justus Corderoy*. [The inflorescence which our valued old correspondent sends is a very lax flower-spike of a crimson Antirrhinum, in which the flowers come in pairs at intervals of 2 inches, and the flowers themselves are also attenuated, and small as regards the lateral diameter. It can scarcely be called an improvement on the type. Ed.]

STOKESIA CYANEA.—A recent reference in your columns to this Composite might lead to the conclusion that it is a very late bloomer. So far as my experience goes, and it extends to thirty or more years, in a well-drained, mixed soil, it is by no means late. Not seldom it commences flowering by the end of July, and it is rarely later than August and the first half of September. It has very frequently produced perfect seed; and in a stronger soil than my own in this neighbourhood, I have just seen well developed flower-heads. Though a native of South Carolina, it has never received any protection here. *W. Thompson, Ipswich*.

HYBRID BLACKBERRIES.—Your correspondent "A. B." speaks of the fruit of *Rubus laciniatus* as "the finest of all Blackberries." My experience does not agree with this. I have cultivated this plant for six or eight years. It grows luxuriantly, bears large panicles of flowers, and sets a fair quantity of fruit, which is large and handsome in appearance, but juiceless and tasteless. It might be good for hybridising, but is of no value as a fruit-bearer. This is my experience. But I see that the Rev. Moyle Rogers, in his new *Hand-book of British Rubi*, speaks of "the forms" of *laciniatus* as if there were several. It seems possible, therefore, that "A. B." may refer to some other form which does bear useful fruit. *F. T. Mott, Leicester*.

CARNATION MRS. T. W. LAWSON.—When I read Mr. W. J. Godfrey's criticism on my remarks respecting this Carnation, I could not but say to myself, "A very poor apology for a very poor flower, written from interested motives." I say interested motives, because I see in Mr. Godfrey's list he is trying to push this particular variety, although I fancy from his remarks in his list that he has never yet seen a bloom of it. Mr. Godfrey seems to overlook the fact that we have a standard of excellence in Carnations that all English growers try to work up to, and if he will carefully note, nineteen out of every twenty new varieties that are raised by English growers are all smooth-edged petals, instead of the dentate-edged ones, and although in this instance he might praise the dentate-edged, still one of his recent introductions figured in the *Gardeners' Chronicle* of September 8, shows the true English or smooth-edge type. Had Mr. Godfrey visited the Carnation exhibitions at London or Birmingham of late years, he would have seen that there are now as many classes arranged for Carnations staged without the paper collars or cardboard supports as there are with them. My aim in growing Carnations is to get as near to perfection as I possibly can. I buy from forty to fifty new varieties in most years in order to test them; this year I have tested no less than seventy-seven so-called new varieties, only to find that they are so near, and in some cases inferior to varieties already in commerce, that out of the seventy-seven I have tested, I shall not keep twenty. *R. Sydenham*.

BLINDNESS IN SAVOYS, ETC.—From many quarters this year come reports of blindness in Strawberry-plants. It is the case here: Sir J. Paxton, Veitch's Perfection, and other sorts more or less. But my object in writing is not so much about Strawberry-plants, which are bad enough, but about blindness in the Brassica family. Here half of our Savoys are "blind," gone so since being permanently planted

out. Hundreds have been pulled out, and replaced with sound looking plants. Still half the crop is "blind," and the same is the case with Cauli-flowers, Brussel Sprouts, and spring-sown Cabbages, but in a lesser degree than with Savoys. It was the same last year, when I attributed it to Aphid attacks, but none has been observed on the plants this year, and I am at a loss to account for the malady. *J. Easter, Nostell Priory Gardens*. [The blindness our correspondent complains of is usually due to the attacks of insects in a very early stage. The seed-beds should be dressed with quick-lime, soot, or spent hops, and weak guano-water or quassia-water may be applied. No plant should be set out that is not perfect in the central parts. Ed.]

A SUBSTITUTE FOR TURF ON LAWN.—In your last issue, p. 191, *Veronica repens* is stated to make a good substitute for turf on lawn; in my opinion the *Savin* (*Juniperus Sabina* var. *tamariscifolia*), is far more suitable—makes a closer sward, it is hardy, and requires no pegging down or rolling. On my recommendation, the *Savin* was used as a substitute for turf at Farnborough, Kent, and with excellent results. *A. D. Webster*.

A CLASSIFICATION OF SIXTY SUMMERS.—The following classification of the last sixty summers, at Greenwich, according to the temperature of the months, may perhaps interest some of your readers. Months are regarded as hot, when above the average temperature; cold in the opposite case. Where some months are specified as hot, the rest (if any), are to be understood as cold.

	Total.
1. All three months, June, July, and August, hot: 1846, '57, '59, '68, '76, '78, '87, '93, '95, '97, '99 ...	11
2. June and July, hot: 1855, '70, '72, '85, '96, 1900 ...	6
3. July and August, hot: 1847, '52, '55, '73, '84, '86 ...	6
4. June and August, hot: 1842, '51, '56, '58, '61, '75, '77 ...	7
5. June, hot: 1844, '45, '50, '66, '89, '91 ...	6
6. July, hot: 1869, '74, '81 ...	3
7. August, hot: 1843, '49, '63, '67, '71, '80, '83, '92, '93 ...	9
8. All three cold: 1841, '48, '53, '54, '60, '62, '64, '79, '82, '88, '90, '94 ...	12
	60

These figures reveal, I think, some tendencies of our climate. The first and last divisions, three months hot and three months cold, present another aspect of a fact to which I have elsewhere called attention, viz., that most of our very hot summers are in the later half of a decade (reckoned from years ending 0 to years ending 9). Thus, of eleven very hot summers, in the above sense, ten are in the later half; and of twelve very cool summers, nine are in the earlier half (the exceptions are indicated by brackets). These two sections, twenty-three summers in all, comprise, it will be seen, more than a third of the whole; besides heading the list. The next commonest case is that of August hot, and June and July cool (nine cases); but it is little above the four sections, 2, 3, 4, and 5, with six or seven cases each. The rarest case is July hot, between two cool months. These relations might, of course, be altered in time. Each decade is represented both in the first and the last section, but in no others. The large number of summers with three months hot in the nineties (4) is noteworthy. Other relations may be made out by your readers. *Alex. B. MacDowall, F.R.Met.S.*

THE AUBERGINE.—Since sending you the note which appeared in last week's *Gardeners' Chronicle*, I have come across a curious and interesting reference to the Aubergine in the first volume of *Loudon's Gardeners' Magazine*, 1826, p. 307. It is comprised in "Notices of Communications to the Horticultural Society, between January 1, 1822, and January 1, 1823, of which separate Accounts have not been published in the Transactions." The extract runs thus:—"Peter Rainier Eyr, Captain R.N., communicated directions for cultivating and cooking the *Bimjal*, a variety of the common Egg-plant (*Solanum melongena*), producing dark coloured elongated fruit, which is much used in the East Indies, especially at Bombay. It is also established as an esculent in the French gardens, under the name of Aubergine. . . . They are very generally used in the East Indies in curries and made dishes; but the usual and best mode of dressing them is, first to parboil them, and then, dividing them lengthwise, to score them across and across with a knife, to dress them with butter, pepper, and salt, and to broil them on a gridiron." *W. Roberts, 47, Lansdowne Gardens, S.W.*

SOBRALIA CATTLEYA.—In your article on Highbury I was especially interested in the remarks on *Sobralia Cattleya*, as it is probably the same plant which I tried to induce to flower, but without result. When I came to this place I found here a strong specimen of this species, and having the advantage of a warmer climate than that of Birmingham, I resolved to try outdoor treatment during the summer for this plant. It was placed outside against a wall for three months, and from the middle of June it was slightly shaded from the sun during the warmest part of the day, until the foliage became hardened. The treatment seemed to suit the plant, which has been proved by its starting vigorously from the base; and these growths differed in some respects from those which grew under glass, as they formed at the base a bulb similar to what occurs in *Cattleya Bowringiana*, and this formation caused me to have great hopes of ultimate success. In the month of September the plant was put back into a house where *Dendrobiums* were resting, and kept for nearly six months without any water being afforded it, but no flowers came. I tried the same kind of treatment for three years, except that Veitch's horticultural manure was applied during the summer, and the plant was not kept so dry during the winter; but I had no success. It would be interesting to know if any of your correspondents have tried outdoor treatment for this species of *Sobralia*. *C. Woolford, The Priory, I.W.*

POTATO TRIALS AT THE ROYAL HORTICULTURAL SOCIETY'S GARDENS, CHISWICK.—Your correspondent, Mr. W. J. Godfrey, Exmouth, p. 210, seems to infer that when the variety *Beauty of Hebron* was sent from the U.S.A., it was a variety that would stand all kinds of tests for all time, and that a dry season suits the soft-topped American varieties, which are very prone to the disease in wet seasons. No doubt all those who like a white-fleshed, mealy Potato, which *Beauty of Hebron* is, will agree that it and its white sports, *Duke of Albany*, &c., are still useful varieties, for which there is a good demand; but to attempt on those grounds to disparage the general good work done by the various Fruit Committees of the Royal Horticultural Society is unfair and unjust. No one who has attended the Drill Hall meetings for the past few years will assert that the Royal Horticultural Society is doing no good work for the gardening world in this country. *R. M., Newbury*.

— I am in no way concerned in defending or otherwise the acts or omissions of the Fruit Committee of sixteen years ago; what it did or did not do in relation to the Potatoes sent to Chiswick by Mr. Godfrey, it no doubt did with good reasons. But if that committee then ignored *Beauty of Hebron* or *Puritan*, sent under another name, it is difficult to understand why the present body should be the subject of animadversion because now it elects to revise the acts of its predecessors. *Beauty of Hebron* Potato, as also *Puritan*, were sent to Chiswick by someone to be tried in conjunction with assumed new varieties, and the committee on lifting the produce and finding both gave such capital crops, had both sent together with others to be cooked, and both when cooked were of such admirable quality, that finding neither had previously received any award, gave such to both. I having had a very wide experience of Potatoes, and never before heard of *Queen of the Earlies*. On the other hand, I was one of the first in the kingdom to grow *Puritan* on receiving it from America, and found it to resemble the white form of *Beauty of Hebron*. But the variety sported first in America, and the sport having got universally into commerce under the name of *Puritan*; and it is the shorter name also that has been generally adopted; hence the pink form gets an award as *Beauty of Hebron*, and the white one as *Puritan*. Mr. Godfrey refers to the opinion expressed in the Royal Horticultural Society's *Journal* of 1897, that the soil did not suit *Beauty of Hebron*, &c. Everyone familiar with the soil of the Chiswick gardens knows that in hot, dry seasons it dries up so rapidly that only gross-growing Potatoes can thrive in it. That was the case in 1897. This year the moisture having been more abundant, early varieties have done better, there, than have late ones generally, as these latter have made far too much top-growth. Thus it is that the varieties named came out so well. Mr. Godfrey wishes to see the committee bound hard and fast by the "object" he quotes in relation to giving encouragement to

new things. But that object does not exclude granting awards to good old things also. The object quoted is the primary guide of the committee, but it is not the sole one. Whether the awards made by the Royal Horticultural Society's committees have no weight with practical men, or they have, is a matter of opinion. I have found Mr. Godfrey to be just as anxious to obtain them as anyone else, and no doubt just as disappointed as others when he has failed. But those who fail often do so in good company. However, it is very evident to anyone familiar with the proceedings of the Royal Horticultural Society's committees, that there is a great—indeed, an increasing desire, to secure awards for all sorts of things, and that desire will continue to grow. *A. Dean.*

NOTES ON TREES, &c., AT KILRUDDERY, BRAY.

NESTLING at the foot of the Wicklow Mountains, and amidst scenes of natural scenery, the gardens of the Earl of Meath were happily conceived. The demesne and policies attached, formerly belonged to the Abbey of St. Thomas the Martyr, although their appearance recalls to our mind days long prior to the Reformation. The extent of their liberties embraced a considerable area, so that at the dissolution of the monastic establishments, the ownership of the monastery of Kilruddery was transferred to a follower of Henry VIII., and the lands and heritages entrusted to the safe keeping of Sir William Brabazon, a statesman and warrior of considerable achievements, and progenitor of the present noble family (in passing, the family's acts, both public and private, are punctuated by the kindest thoughts that sympathy can suggest; starting and endowing schools, clearing areas for playgrounds, and much other thoughtful work).

Owing to the chain of succession being unbroken, the ancient deed of gift is still extant; and it is in perfect condition amongst the archives of the family. The greatest privilege enjoyed within their policies was the control of the water-supply to a portion of the Irish metropolis; this the family retained for a considerable period of time, but it was finally abolished in the year 1859, when the Corporation undertook the task of obtaining a supply from one source, the Vartry. The arms of liberty, which were hung behind the judge's seat, and used in the Manor court, situated at the remote end of a portion of the property in Dublin, is now at the family seat; the court no longer exists, but a fountain keeps its memory green. When once within the boundaries of the property, the links of mediæval times to be found there are very few, the abbey or monastery is no longer visible, for the hand of time has carefully removed every vestige, leaving a few traces of the bye-gone pastimes; of these the sylvan theatre is preserved. This theatre is surrounded with a hedge of Sweet Bay, and a raised bank of green sward carefully clipped, upon which the strolling players of Elizabethan and later times helped to beguile the tedious hours, and Nature herself was the scenic artist. The bowling-green is of large size, oblong in form, with steep inclines, and screened from peering eyes by a Yew hedge of massive proportions, which is still in perfect health and vigour. Here, too, the devotees of Isaac Walton enjoyed their pastime in a series of ponds, the only one remaining being of the shape of the ace of clubs. Mr. Childs, his lordship's courteous gardener, pointed out the sites of the others, similarly designed to those of the well-known ace of cards. Quite close to the lawn, and on the right-hand side, is a very beautiful fountain in the centre, the jets being numerous, and clustered together, and a small pond kept clear of all forms of vegetation, the whole being surrounded with a well-trimmed Beech hedge, about 30 feet in height, and at least 15 feet in thickness. There is a passage running through it; and though I do not know the exact measurements, it would not be far short of 7 feet

in width, and about 10 or more feet high. There is likewise an avenue leading to the sylvan theatre, possibly intended as a cool retreat. At intervals there are life-size bronze statues, a more modern innovation. The whole conception vividly brings before one's mind the formality then reigning, for beauty in such a work there was none, and the object must have been purely a utilitarian one, withal. Its retention is desirable for historical evidence.

The avenue leading to the mansion is flanked in the summer season by Orange and Lemon-trees in a fruit-bearing condition; on the left-hand side a deep recess running parallel to the avenue, and just reaching the mansion, was filled at the time of my visit with varied specimens of carpet-bedding, whilst a neatly-clipped hedge of Sweet Bay and Yew stiffly outlined the whole. At one end Dahlias in variety were blooming profusely, helping to vivify the sombre scene. The beds were edged with Sumach, dwarf Hollies, Golden Yew, and Juniperus Sabina; the edging towered somewhat, but viewed from the lawn the effect was good. After viewing the geometrical designs furnished by a member of the family, which are well wrought out, the interlacing of curves, circles, &c., being, to speak the least of it, curious; just opposite the house a fine plant of *Dracena indivisa* came into view. This consisted of five magnificent side shoots, having their origin in an old stump, the crown of which had died. They were at least over 35 feet high. This is about the largest specimen found growing in Ireland. In front of the mansion there is a large sheet of water, likewise kept free of aquatics. When in this vicinity some curious traces of monkish times had lingered whilst the centuries grew and waned, were noted, viz., a series of hedges, in general design triangular, and radiating probably from one or more centres; they were composed of Lime, Hornbeam, Beech, and Yew. They were so constructed, always narrowing to a point, and then opening out, but in a different direction. This curious design had covered an enormous area of ground; the trees were in perfect health, quite dense (except the Hornbeam, which was more open), and a mass of foliage; and at intervals statues were erected on granite and limestone pedestals, whilst the boughs of adjoining trees had formed a natural pergola over the whole, whose umbrageous shade was very pleasant when resting from the fierce glare of a summer's sun. When walking through those quaint triangles, a fine Yew hedge was observed; it was close on a half mile long, and the adjacent turf set it off to advantage. Close by, Rhododendrons were planted largely, comprising the best types, a truly representative collection of hardy varieties. Alongside the pond, and facing the mansion, lime-tree hedges were much in evidence. It is from this point that several magnificent views can be obtained: looking from the mansion the Little Sugar Loaf mountain is seen in the distance, upon whose sloping sides trees grow in abundance. This forms the deer park; and though contiguous to the pleasure ground, it is separated from it by a moat. The moat is in excellent preservation. From the avenue a rocky promontory is seen, the massive rocks jutting out amidst a mass of foliage. From the highest point hereabouts the mansion of Powerscourt can be discerned, whilst the outlying suburbs of Dublin lie at the foot. It is from this point of vantage the gorse-clad hill, Brayhead, can best be viewed.

The Araucaria-walk disclosed thriving trees planted closely, several of which were coning freely. Of the Scots Fir, several splendid trees were seen, with stems straight and tall, clearly showing the suitability of the climate in Wicklow for its culture for commercial purposes. There were several fine specimens, and the finest measured 5 feet 9 inches in girth at 5 feet from the ground. It is on this walk that two fine *Pinus insignis* are growing, one measuring at 3 feet from the ground over 14 feet, and at 2 feet higher up 15 feet; the height of stem was 16 feet 8 inches,

and the diameter of the tree through the branches was 50 feet; its trunk was slightly fissured, and time had etched on its sinuous stem the tokens of age. Lower down the mount, the Atlas Cedar was represented by a giant specimen, whose foliage had a sheen not usual with smaller specimens, due to the silvery hue of the needles. It was an attractive object when seen in juxtaposition with the sombre-hued neighbouring Conifers. Its trunk girthed at a few feet from the ground 7 feet 2 inches; the trunk was 41 feet 5 inches high; the diameter of the crown 53 feet. In close proximity to this Cedar some Evergreen Oaks formed unique objects. They had been planted close together, and at the time the Arboricultural Society of Scotland sojourned in Ireland this group of *Quercus Ilex* formed a theme for discussion, owing to the enormous growth the individual trees had made in a very constricted area. The largest tree is 11 feet in girth at about 5 feet from the ground, whilst the remainder did not fall far short of this. Then, passing by grass walks flanked at intervals by close and massive hedges, this densely-planted area was found to be set with trees of all sizes, most of them stately specimens, and the whole scene recalled the formal Dutch school.

The clumps of Beech hereabouts observed are scarcely surpassed by any in the world. The finest tree gave the following measurements: girth of stem at breast height, 14½ feet; height, 104 feet; and diameter of crown, 103 feet. *Abies nobilis* is a species which grows exceedingly fast here. A very fine Copper Beech, about 60 feet high, and 20 feet through the crown, was remarked.

THE HOUSES.

A range of glasshouses has been recently built across the kitchen garden, which is apart from the vineries and fruit-houses. In the latter, good crops of fruit were noted. *A. O'Neill.*

FOUL-WEATHER FLOWERS.

IN Scotland the complaint is universal that flower-gardens have been spoiled by an uninterrupted rainfall. Gardeners in the southern parts of the Island cannot realise what this means to those located in the north, where to meet the family while in residence a display of bright flowers is always desired in autumn, and specially planned and worked for throughout the year. In too many instances, instead of brightness on the flower-garden there is a depressing view of flowerless Pelargoniums and Calceolarias, of rotting China Asters and Carnations, or of yellowed and dying Tropæolums. Those who have turned aside from the beaten paths have certainly the greatest case for congratulation this year, and we may expect as a consequence the old-fashioned bedding plants to be less cultivated than ever in the future.

In writing of foul-weather flowers it should be remembered that all are not alike in withstanding wet weather. The best and brightest flowers, which seem rather to enjoy plenty of rain, are the Begonias; not the ordinary tuberous section only, but those of the fibrous-rooted section also. The last-named are not largely grown, but some of them, such as *Fraicheur*, *Obelisque*, and the old *Weltoniensis*, are well fitted to adorn a garden in the autumn, and rain affects them not at all. *Ageratum*s are equally proof against rain; and that very pretty annual with its starry blooms of white and lilac, *Brachycome iberidifolia*, is invaluable. I was much attracted by a simple combination consisting of *Saponaria calabrica*, and the common Sweet Alyssum, both of which were perfectly fresh after the heaviest downpour. *Linaria bipartita aurea reticulata* is also a commendable plant, rain having no bad effect upon its flowers, and it is always bright and telling.

This season I have planted *Verbenas* somewhat largely, but they have been rather disappointing, though they possess the desirable property of

quickly regaining their wonted appearance directly the rain has passed over. I have colours absolutely true from Messrs. Veitch's seeds, and a delightful variety of colours from Mr. Eckford's strain, as well as two pretty pink varieties from Miss Wilmot's garden at Warley Place. Seedlings are so easy to cultivate that raising stock from seeds will be largely the method of production in the future, when the Verbena again assumes the position it once held in the flower garden. The plants are best preserved over the winter by keeping them in a house having a slight degree of warmth, so that growth be not quite stopped. East Lothian Stocks are likely also to receive renewed attention, as nothing could be possibly finer than large beds of these plants. The same remarks apply to Antirrhinums, and equally to the dwarf Tom Thumb section growing not more than a few inches in height, as to the compact though taller White Queen and Golden Queen. These come quite true from seeds, and they are best treated as half hardy annuals by sowing in heat in February. The same kind of treatment suits the glorious hybrid Pentstemons which revel in a season like the present. Celosias, both yellow and crimson, are capital wet weather plants, but Cockscombs have unfortunately succumbed largely to damping of the stems. *Matricaria* "Golden Ball" introduced three or four years ago, though not a first-class plant, has been very satisfactory this year, being bright and effective when grouped, and those who are still looking out for a substitute for the *Calceolaria* might find it desirable to give this a trial. A dark purple *Heliotrope* has been so markedly fine throughout the worst of the weather, that one is pleased to be able to put in a good word for a plant that was more appreciated many years ago than it is now. Of plants perhaps less appreciated as subjects for grouping and effect in the mass, *Salvia patens* has proved excellent, and *Montbretias* in bold masses are really capital. Phloxes, while the flowers are dashed off the panicles with heavy and continued rains, so quickly replace them with later buds, that they may well have a place here.

While I write, masses of Phloxes in distinct colours form one of the most telling features in the garden. The most suitable varieties are good whites, shades of pink and rose, of purple, and of scarlet and crimson; the most popular of the scarlet-flowered varieties is *Coquelicot*, but I am inclined to favour *Flambeau*. *Etna* is also a telling variety. Many of the new varieties that are being introduced are, unfortunately, positively ugly in their colouring; and such very old varieties as *Bryan Wynne*, *Bridesmaid*, and *Madame Maisset*, are still worth cultivating. *Le Mahdi*, for example, growing in a group, has been very disappointing in its effect. A plant that has given great satisfaction is the very old *Tradescantia virginica*, of which among other forms I grow a very dwarf one in quantity; this has been continually bright and effective. Equally fine in its way is *Rudbeckia speciosa*. Rain appears to make this flower the better, and does no harm to the expanded blooms. To have it at its best the plants should be lifted annually, divided, and replanted in fertile soil, placing the pieces about 9 inches apart from each other. As flowers are produced till late in the season, these operations are best undertaken early in the spring. Another plant, having very much the same effect as the above, is the annual *Coreopsis tinctoria*. It also is proof against rain. The "Golden Glow," *Rudbeckia laciniata* fl. pl., along with its other good qualities, takes no harm from rain. It is perhaps too tall for some gardens, but if mixed with pink Hollyhocks as I have it, its height is not so conspicuous, and the combination is in itself pleasing. *Echinops Ritro* too associates well with it, and this also can be recommended as equally good in wet weather as dry. In the Japanese Anemones we have also a reliable group of first-class decorative plants. At present one cannot say much for the new forms. The latest, *Empress Charlotte*, is not yet in bloom, but earlier

introductions have not been unqualified successes, and mainly because wet weather was inimical to the flowers expanding freely.

The same effect is seen in China Asters, the double varieties of which have had all the expanded blooms rotted by the rain, while single forms have not been injured; and in like manner, while single Dahlias have not been injuriously affected, Cactus varieties have all been destroyed. *Galtonia candicans* proves equally good this season as in former ones, and *Boltonia asteroides* has never been prettier, while the early Asters, such as *A. ptarmicoides*, *A. Milleri*, *A. aurora*, *A. corymbosa*, *A. puniceus*, and others, have not been damaged in the slightest degree.

The same remark applies to all sections of Marigolds, which are undoubtedly flowers for all kinds of weather. The double forms of *Chrysanthemum coronarium* have also been quite bright, but early sorts of *C. indicum* have generally done badly, and none more so than *M. G. Grünerwald*, which was superb last season. With the annual *Larkspurs* I will conclude this short list, and among these a dwarf clear blue variety named "Butterfly," from Messrs. Carter & Co., has been particularly fine. Pansies of all classes have also done well. B.

SOCIETIES.

SCOTTISH HORTICULTURAL ASSOCIATION.

WHEN a few weeks since the Conference on Sweet Peas was held at the Crystal Palace, Mr. Eckford, of Wem, took a leading part; and at a meeting of the above held in Edinburgh on September 11, Mr. McKenzie, of the Warriston Nurseries, in the chair, Mr. Eckford gave a summary of the reasons for lecturing, viz., that the horticultural lecture had now come to stay, and the art of cultivating the Sweet Pea had come to be developed here to the utmost perfection the plant was capable of. On the table stood three vases of very fine Tea Roses, one of mixed varieties of *Chrysanthemums*, including a vaseful of *Crimson Pride* of a striking tint. There were besides *Cranston Excelsior*, *Ailsa Craig*, and *Trebon's Onions*; a boxful of *Rubus* midway between a Blackberry and a Raspberry; and *Verbena Miss Wilmot*, a flower of a bright pink colour.

Minutes of last meeting were read, and four new members proposed. The chairman, Mr. McKenzie, then alluded to the Sweet Pea, and Mr. Eckford read the same paper which he read at the Crystal Palace Conference.

A gentleman non-member then spoke and said, Sweet Pea Cupid was not of much use in the north. Mr. Jas. Grine called the Sweet Pea the flower of the field. It did not require much manuring; we might have them longer, perhaps, and stronger. Mr. Brotherton said if anyone deserved a medal it was Mr. Eckford. He was first in America, first in Britain, and first in Europe. Mr. Wright, editor of *The Gardener*, spoke against excessive manuring, as having a tendency to making many leaves and shoots, 8 or 10 feet high, and long stems. Mr. Todd said the more manure the better. Mr. D. T. Fish had then a clear reply from Mr. Eckford to the question—Do you consider the Sweet Pea as hardy as the Marrowfat and other edible Peas? The answer was—Yes. D. T. F.

BOSTON DAHLIA.

SEPTEMBER 12.—The Dahlia-loving folk of Boston (U.S.) can be complimented upon making an excellent display at the second exhibition of their Society on the 13th inst. It took place in the spacious Drill Hall, and a very fine display resulted. The Boston amateur gardeners have taken to the Dahlia, and so have many of the working men; they grow them well, and stage them in an excellent manner. That the Dahlia is the flower of the poor man was illustrated here to a remarkable extent.

Chief among the miscellaneous exhibits was an extensive collection of cut flowers, including herbaceous perennials and annuals, the latter comprising a collection of the various types of Asters, Tomatoes and other choice vegetables were also included. This came from Messrs. W. W. JOHNSON & SON, LTD., seed merchants, Boston, and occupied one end of the Hall. Mr. J. Green (HOBBS & CO.), Dereham, staged a large and imposing collection of Dahlias (the newer Cactus types predominating), Gloriettas, and garden Roses, &c. Mr. R. H. BATH, LTD., Wisbech, had an excellent exhibit of Gladioli and Dahlias; Mr. J. ARNOLD, florist, Stoke, Devonport, sent a collection of new Cactus Dahlias, some of which bore names borne by varieties which have received the Certificate of the National Dahlia Society. Mr. A. EDWARDS, Arnold, Notts, had one of his artistic collections of Ferns;

and Mr. H. H. SMALL, florist, Boston, had early Chrysanthemums and a good assortment of cut flowers.

The chief competitive class was denominated a Champion one, and handsome prizes were offered for twenty-four show Dahlias shown on boards, and twelve bunches each of Cactus and Pompon varieties. Messrs. KEYNES & CO., Salisbury, were placed 1st, having splendid Cactus Dahlias, with good show and Pompon varieties. Of the former they had *Cornucopia*, *Elsie*, *Ajax*, *Night*, *Mary Service*, *Innovation*, *Fighting Mac*, a very promising new variety; Mrs. J. J. CROWE, Mrs. CARTER PAGE, *Britannia*, and *Magnificent*. Of show Dahlias they had *Harrison Weir*, *Gloire de Syon*, *Duke of Fife*, *Colonist*, *Florence Tranter*, W. Keith, William Powell, *Eclipse*, *Dorothy*, *Duchess of York*, *Arthur Rawlings*, *John Walker*, Mrs. Gladstone, *Virginal*, &c. Of Poupous they had, in good form, *Sunny Daybreak*, *Arthur West*, *Emily Hopper*, *Dragon*, *Edith Bryant*, *Bacchus*, *Whisper*, Dr. Jim, &c. Mr. JOHN WALKER, nurseryman, Thame, was 2nd; he having very fine show Dahlias, and charming Poupous, but lost on his Cactus, which lacked refinement.

There were several additional open classes, and in the leading one for twenty-four show and fancy varieties, Mr. WALKER was again 1st with highly-finished blooms, chief among them being W. Powell, *Imperial*, *Majestic*, *John Hickling*, *Mabel Stanton*, Mrs. W. Slack, *Kathleen*, and J. C. Vaughan; Mr. G. HUMPHRIES was 2nd. Mr. WALKER was again 1st for twelve varieties.

The class for twenty-four blooms of Cactus Dahlias shown on boards brought an excellent competition. Messrs. KEYNES & CO. were 1st with highly-finished blooms of *Britannia*, *Magnificent*, *Progenitor*, *Elsie*, *Cornucopia*, *Ruby*, *Loyalty*, *Zephyr*, *Night*, *William Treseder*, *Island Queen*, J. F. Hudson, *Keynes' White*, &c.; Mr. W. BAXTER, nurseryman, Woking, was a good 2nd, staging capital blooms also of much the same varieties.

With twelve blooms Messrs. KEYNES & CO. were again 1st, and Mr. JOHN WALKER, 2nd.

Mr. M. V. SEALE, nurseryman, Sevenoaks, had the best twelve bunches of Poupous, consisting of small, even, perfect blooms of *Lilian*, *Ganymede*, *Ernest Harper*, *Sunny Daybreak*, *Douglas*, *Snowflake*, *Nerissa*, *Phoebe*, *The Duke*, *Donovan*, &c.; Mr. GEO. HUMPHRIES, was 2nd.

With twelve bunches of Cactus varieties, Mr. HUMPHRIES was 1st; his leading varieties were *Britannia*, *Magnificent*, *Major Weston*, *Clown*, *Floradora*, *Cinderella*, *Island Queen*, *Arthur Vasey*, *Keynes' White*, &c. Mr. J. WALKER, was 2nd.

The best vase of Dahlias, a charming one, came from Mr. M. V. SEALE.

There were several classes for amateurs; the most successful with show Dahlias were Messrs. Z. INGLAND and W. H. RAWNSLEY. There were classes also for show Dahlias grown by amateurs, and in these the working-men staged good blooms.

DAHLIA SHOW AT THE ROYAL AQUARIUM.

SEPTEMBER 16, 19, 20.—In place of the Dahlia show that for some years has been held in September in the Royal Aquarium, Westminster, under the auspices of the National Chrysanthemum Society, the Aquarium Company arranged a similar exhibition for the above dates. Mr. R. Dean acted as secretary and superintendent of the show. There were thirteen competitive classes, and in most of them there were numerous exhibits, and the blooms were of good quality. The competitive exhibits were accompanied by some fine displays from trading firms, and together they made an excellent exhibition.

The principal class for show and fancy Dahlias was one for twenty-four blooms distinct, and it was won by an exhibit from Mr. JOHN WALKER, Thame, Oxon, that showed very good quality. Mr. GEO. HUMPHRIES, Kingston Langley Nurseries, Chippenham, was 2nd; and Messrs. KEYNES, WILLIAMS & CO., Salisbury, 3rd.

The best collection of twelve blooms was shown by Mr. M. V. SEALE, Vine Nurseries, Sevenoaks. Another class for twelve blooms (amateurs) was won by E. WEST, jun., Esq., The Laurels, Frieth, Henley-on-Thames.

The Cactus varieties were most popular, and Messrs. J. BURRELL & CO., Cambridge, had an excellent exhibit of twelve varieties in bunches, showing the lovely *Rosina*, and others certificated at the last meeting of the Royal Horticultural Society's Committees at the Drill Hall. Messrs. JAMES STREDWICK & SON, Silver Hill Nurseries, St. Leonard's-on-Sea, were 2nd; and Messrs. KEYNES, WILLIAMS & CO., Salisbury, 3rd.

The best collection of twenty-four single blooms distinct (on boards), was shown by Messrs. J. STREDWICK & SON; and Messrs. J. BURRELL & CO. were 2nd; Messrs. KEYNES, WILLIAMS & CO. following.

An amateur's class for nine varieties, three blooms in a bunch, was won by HERBERT L. BROUSSON, jun., Esq., Sidecup Place, Sidecup, Kent; and F. W. SHARP, Esq., Great Martins, Waltham St. Lawrence, Twyford, Berks, was 2nd.

Twelve blooms, distinct, on boards (amateurs), were best from E. WEST, jun., Esq.; and Mr. R. BURGIN, St. Neot's, Hunts, was 2nd.

A vase arranged with twelve Cactus blooms and suitable foliage from H. A. NEEDS, Esq., Heath View, Horsell, Woking, was very pretty. The blooms used were crimson and yellow varieties, relieved with a few *Codium-leaves*, &c. A larger class for three vases, each to contain nine Cactus blooms, was won by Mr. M. V. SEALE.

Pompon Dahlias were shown very creditably by Mr. M. V. SEALE, who had 1st prize for twelve varieties shown in bunches. Emily Hopper, Douglas, Nellie B'omhead, Donovan, Spitfire, and Ganymede, were conspicuous varieties Mr. CHAS. TURNER, Royal Nurseries, Slough, was 2nd.

An amateurs' class for six varieties was won by R. BURGIN, Esq., St. Neot's, Hunts.

Mr. M. V. SEALE had the best collection of single flowered varieties in the nurserymen's class; and Mr. ED. MAWLEY, Rosebank, Berkhamsted, the best collection in that reserved to amateurs.

NON-COMPETITIVE EXHIBITS.

Mr. JOHN GREEN, Norfolk Nurseries, Dereham, had an extensive exhibit of Cactus Dahlias at the west end of the building. His large, showy type of Cactus varieties was well exhibited, as Red Rover, Uncle Tom (deepest crimson); The Clown, light red, with white tips to the petals; Zephyr, magenta, with purple shade; Major Weston, Radiance, &c.

Mr. ERIC F. SUCH, Maidenhead, had a collection of hardy flowers.

Mr. F. C. FOWLE, Devon Chrysanthemum Nursery, Teignmouth, showed Dahlia blooms, Sweet Peas, and zonal Pelargonium flowers.

Messrs. J. PEED & SONS, Roupell Park nurseries, West Norwood, had a collection of Begonia flowers from the plants in the open air.

Mr. H. J. JONES, Ryecroft Nursery, Hither Green, Lewisham, had a very nice group of miscellaneous plants, in which the principal features were small groups of Cannas and tuberous-rooted Begonias, the Begonias having been lifted from the open ground. There were winter-flowering fibrous-rooted Begonias also, including Moonlight, a variety with white flowers, that appears to travel well and hold its blooms. Bamboos, Codiaums, Palms, &c., formed a background to the exhibit.

Messrs. H. CANNELL & SONS, Swanley, Kent, had a capital exhibit of Cactus Dahlias, put up in the most attractive manner, and at either end of this exhibit the same firm had groups of their showy Cannas in pots.

Messrs. DOBBIE & CO., Rothessay, N.B., and Orpington, Kent, had an immense exhibit of Dahlias, and with these were also shown excellent Antirrhinums, white and yellow Queen; Marigolds, early-flowering Chrysanthemums, &c.

Messrs. J. BURRELL & CO., Cambridge, showed a fine collection of Gladioli and other hardy flowers; and Messrs. THOS. S. WARE, Ltd., Feltham, exhibited hardy flowers.

Messrs. B. S. WILLIAMS & SON, Upper Holloway, London, N., showed blooms of a white decorative Dahlia named Snowflake; and Mr. M. V. SEALE showed a collection of Dahlias and excellent specimens of Physalis Francheti fruits.

Messrs. A. W. YOUNG & CO., Stevenage Nurseries, Herts, had a collection of hardy flowers; and Mr. C. TURNER, Slough, and several other exhibitors staged seedling Dahlias.

DERBY AGRICULTURAL AND HORTICULTURAL.

SEPTEMBER 12, 13.—Splendid weather was experienced on both days of the exhibition held in Derby by the Derbyshire Agricultural and Horticultural Society; the horticultural ion was exceptionally well filled, and the exhibits of fruit, flowers, plants, and vegetables, were of very good quality. The competition for the best group of plants, to cover an area of 200 square feet, is generally strong at Derby. In this year six well known competitors came in, namely, Mr. J. WARD, gr. to T. H. OAKES, Esq., Riddings House, Alfreton; Mr. J. CYRER, nurseryman, Cheltenham; Mr. J. S. SHARP, nurseryman, Huddersfield; Mr. G. WOODGATE, gr. to Sir OSWALD MOSLEY, Bart., Rolleston Hall, Burton-on-Trent; Mr. W. FINCH, nurseryman, Coventry; and Mr. W. VAUSE, nurseryman, of Leamington; the prizes going in the order of the names of the exhibitors. The groups filled the whole central space in a large tent, and gave a very charming effect. Codiaums, Palms, Bamboos, Orchids, Lilies, Ferns, Acalyphas, and Ixoras, constituted the finer plants. The Codiaums in Mr. WARD's group were fine examples of good culture, averaging 5 feet in height, and carrying foliage which descended to the rims of the pots. The varieties comprised caudatum Princess of Wales, Warreni, Algburth Gem, and Thomsoni.

The competition in the fruit classes was generally keen, and the quality of the exhibits of a high order of merit. Five competitors entered in the class for a decorated dessert-table, and Mr. J. H. GOODACRE, gr. to Lord HARRINGTON, Elvaston, obtained the premier award; Mr. A. McCulloch, gr. to W. F. WEBB, Esq., Newstead Abbey, Notts, was 2nd; and Mr. J. READ, gr. to Lord CARNARVON, Brethby Park, was 3rd.

Mr. GOODACRE was placed 1st, and Mr. McCulloch 2nd, in the competition for three bunches of Black Grapes.

For three bunches of White Grapes, Mr. GOODACRE was again 1st; and Mr. G. WADESON 2nd.

Mr. J. EVANS, gr. to Sir H. WILMOT, Chaddesden Hall, Derby, was 1st for a Melon; Mr. GOODACRE 1st for Peaches, dessert Apples, and dessert Pears; Mr. G. WADESON 1st for Nectarines; and Mr. G. WOODGATE 1st for kitchen Apples.

The competition in the vegetable classes was very keen, and 1st prizes were awarded to Mr. J. WARD for Tomatoes, Mr. A. RUDNOCK for Kidney Potatoes, white coloured and white round varieties; and Mr. J. WOODWARD for coloured round Potatoes, white Cabbage, red Cabbage, and red Celery.

Mr. G. WADESON was 1st for a dish of Peas, Mr. G. WOODGATE for one of Scarlet Runners, Beans, Turnips, Parsnips,

Vegetable-Marrows, Cos Lettuce, Cauliflower, Beetroot, and collection of herbs; Mr. J. READ for Onions and Carrots; Mr. A. SHIRLAND for White Celery; and Mr. T. EARP for Cucumbers.

For Messrs. SUTTON & SON's special prizes for six distinct kinds of vegetables, there were five competitors, Mr. T. SMITH, Mr. J. READ, and Mr. G. WOODGATE winning the prizes in the order of their names.

Messrs. WEBB & SONS' special prizes for a similar collection were won by Mr. J. WOODWARD, Mr. J. READ, and Mr. W. MERRIMAN respectively.

The exhibits of the amateurs and cottagers made a grand show, filling up nearly the whole space of two large tents. The number of entries in the vegetable classes in these two divisions ranged from ten to nineteen, the number of entries for the whole of the horticultural section exceeding 1100.

Several non-competitive collections were staged, chief among them being Dahlias, from Messrs. CHEAL & SONS, Crawley, Sussex; cut flowers of hardy herbaceous plants from Mr. H. DEVERIL, Banbury; and Onions from Mr. T. WILKINS, Blandford, Dorset, to all of whom special awards were made. G. W.

ROYAL CALEDONIAN HORTICULTURAL.

Grapes.—As noted in our last issue, Mr. LUNT, gr. at Keir secured the 1st prizes for the Grapes; he staged in both of the six-bunch classes, and also in that for four bunches. The varieties shown were Madresfield Court, large in berry and highly finished; Alnwick Seedling, of fine quality; and perfectly ripe bunches of Muscat of Alexandria; and good examples of Mrs. Pince and of Muscat Hamburg were included in the fours.

Black Hamburg were better shown than has been remarked in Scotland for several years. An extra inducement was afforded this year in a medal offered by the Society for any bunch the judges thought worth seven and a half points out of a possible nine points. Mr. MATTISON, gr., Currie, and Mr. POTTER, gr., Whitehall, Cumberland, receiving a Bronze Medal each for a bunch to which seven and a half points were apportioned. The bunches of Muscat of Alexandria from Mr. LUNT were unsurpassable, and he took the 1st prize for this variety, and was also 1st for the best flavoured white Grape with a cluster of the same variety. Messrs. D. & W. BUCHANAN, nurserymen, of Kippen, were also prominent exhibitors in the Grape classes, coming 2nd to Mr. Lunt for six and four bunches, with grand examples of cultivation, also securing 1st for black Alicante. Mr. J. ANDERSON, gr., Dailzie, Peebles, had the best Lady Downes, and Mr. LUNT the finest Madresfield Court, as well as taking 1st prize for the best white Grape in the show, with Buckland Sweetwater.

Collections of Fruit.—For ten dishes, Mr. N. T. BARNES, gr. to the Duke of WESTMINSTER, Eaton Hall, Chester (who also secured 1st for decorated table of fruit), was 1st, showing excellent Madresfield Court and Muscat of Alexandria Grapes; grand dishes of Souvenir du Congrès Pear, and King of Tomkins County Apple, Princess of Wales Peach, Nectarines, a fine Melon, Cos's Golden Drop Plum, and Morello Cherries; Mr. SMITH, gr. to the Earl of STAIR, Oxford, Dalkeith, was a good 2nd; and Mr. MURRAY, gr. to the Earl of AILSA, Culzean Castle, Maybole, was 3rd. The best collection of hardy fruit was staged by Mr. J. DAY, gr. to the Earl of GALLOWAY, Galloway House, Garliestown, who showed Scottish-grown fruits at their best. The 1st prize collections of orchard-house fruit came from Mr. BEISANT, gr., Castle Huntly, Perthshire, who staged dishes of splendid fruits of Marguerite de Marillat, and Souvenir du Congrès Pears, Emperor Alexander Apple, and fine Magnum Bonum Plum. Among those who were the most successful in the hardy fruit classes were Mr. G. MACKINLAY, Mr. BARNES, Mr. DAY, and Mr. MCINTYRE, gr. at the Glen, for Plums; Mr. BARNES, Mr. F. W. CARNEGIE, Mr. J. DAY, Mr. D. GIBSON, Mr. R. W. WHITING, Mr. J. DYMCK, for Apples; among which last, the following were well represented: The Queen, Melon, Peasgood's Nonsuch, Gascoigne's Scarlet, Lord Derby, Gloria Mundi, Ecklinville, Lady Sudeley, Worcester Pearmain, Warner's King, and Lord Suffield. In the Pear classes, which were well filled, the same exhibitors, with Mr. COOK, gr., Gosford, East Lothian, were to the front.

PLANTS.

The best of the plants shown were Orchids, from Mr. W. SHARD, gr., Freeland, Perth; the six foliage-plants, from Mr. T. LUNT; and six of the same, in 9-inch pots, from the same exhibitor. Two Caladiums from Mr. LUNT, and four Exotic Ferns from Mr. G. WOOD, Canaan Lane, who also secured the 1st prize for table-plants.

Cut Flowers.—Gladioli were well shown, and Mr. A. BENNET, Tweedmouth, took the 1st prize for twelve, and for six spikes with good examples. Mr. EDWARD KEITH, gr., Wellington, Cambo, in the same way secured both 1st for Hollyhock blooms; and Mr. W. VETTOR, gr., The Cemetery, Carlisle, secured 1st prizes for Show and for Fancy Dahlias. The best Sweet Peas were shown by Mr. DUNCAN FOGG, gr., Duns, which were good and bright for the time of year. For Roses, Mr. MELVILLE and Mr. BRYDON, gr., Tweedbank, Innerleithen, were most successful, their blooms being fresh and clean. The best Chrysanthemum blooms were staged by Mr. BAIRD; and twelve trusses of the same by Mr. BLACK.

In the nurserymen's division, Roses were the exhibits which attracted the greatest amount of attention. Here, Mr. HUGH DICKSON, nurseryman, Belfast, took 1st for thirty-six blooms; Messrs. D. & W. CROLL, Dundee, being very good 2nd.

For twenty-four Teas, Messrs. ADAM & CRAGMYLE, Rubislaw, were 1st with fresh-looking, small blooms; Messrs. HARKNESS & SONS, Bedale, had the finest Gladioli in the show; and the best Hollyhocks were staged by Mr. DOWNIE, Pinkhill.

The tables of cut herbaceous border flowers, as noted last week, were very striking; and the 1st and 2nd prize collections were of almost equal merit. Messrs. COCKER & SONS staging a nice lot of Montbretias, and Messrs. HARKNESS of Pyrethrum and Gladioli, in addition to many others.

The Society awarded a Gold Medal to Messrs. SUTTON & SONS, Reading, for a collection of fine vegetables and flowers; and a Silver Medal was given to Messrs. WALLACE & CO. Colchester, for a table of Lilies in which L. longifolium in variety was conspicuous.

A grand group of cut blooms of Dahlias, Roses, Marigolds, with twenty-five dishes of Tomatoes, from Messrs. DOBBIE & CO., Rothessay, also secured a Silver Medal.

Messrs. D. & W. BUCHANAN were the recipients of a Silver Medal for their fine exhibit of Grapes.

A large number of Special Awards and Awards of Merit were also made to other trade firms, to whom the society and the public were greatly indebted for the success of the show.

The Fruit and Floral Committees met on the 12th, the former making no awards; but the Floral Committee gave to Mr. FORBES, Hawick, a First-class Certificate for Begonia Caledonia, and to another exhibitor an Award of Merit for white Carnation Miss F. Sutherland.

MISCELLANEOUS SOCIETIES.

Moffat and Upper Annandale.—The annual show took place on the cricket field on the 14th inst. The entries showed a considerable falling off this year, especially in the amateur classes, numbering 1,075 against 1,200 last year. Nevertheless, there was an exceedingly meritorious show. Cut flowers were, as usual, especially strong, and fruit, particularly in the gardeners' section, was good. Messrs. KERR, Bros., Dumfries, had on exhibition a fine stand of new varieties of Cactus Dahlias, and some beautiful Liliums. Messrs. PALMER & SONS, Annan, and Messrs. THOMAS SMITH & SON, Stranraer, exhibited a large number of varieties of hybrid perpetual and hybrid Tea Roses. The tables of stove plants of Messrs. EWEN CAMERON, Ericstane, and WILLIAM MURRAY, Ardenholm, were very fine. These exhibitors were the most successful in the gardeners' classes, Messrs. L. FRAZER, Craigielands; J. HAMILTON, Haywood; and J. ALLAN, Arundel House, Dumfries, running them closely.

TRADE NOTICE.

We are requested to inform our readers that Frau Marie Müller, widow of the late Ernst Müller, has become the proprietress of the concern, trading as "T. C. Schmidt" in Erfurt, of which her late husband was the head. The business will, in all its branches, be carried on as heretofore.

MARKETS.

COVENT GARDEN, SEPTEMBER 20.

(We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day but often several times in one day. Ed.)

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, English, per bushel—		Nectarines, per doz.	
Worcester Pearmain ...	3 0-4 0	Class A. ...	4 0-8 0
Warner's King ...	4 0 —	Class B. ...	3 0-4 0
Suffolds ...	1 6-2 6	Oranges, Jamaica, per case (200)...	8 0-10 0
Keswicks ...	1 0-2 0	Peaches, per doz.—	
Various ...	1 0-3 0	Class A. ...	8 0-10 0
Bananas, bunch ...	7 0-11 0	Class B. ...	2 6-4 0
Blackberries, peck ...	1 0 —	Pears, Californian, cases ...	5 0-7 0
Cobnuts, lb. ...	0 4½ —	— home grown	
Figs (New), per dozen ...	0 9-1 0	Hazels, bush... 1 6-2 0	
Filberts, per lb. ...	0 3 —	— Willms, English, sieve ...	1 6-2 0
Grapes, Hamburg, new, per lb. ...	1 0-1 6	— bushels ...	3 0-3 6
— Alicante ...	0 9-1 0	— Stewing, p. bkt. ...	2 6 —
— Colmar ...	1 0-2 0	— French, Bon Louise, in crates. ...	2 6-5 0
— Gros Maroc, lb. ...	1 6-1 9	— Duchess, in crates ...	5 0-8 0
— Muscats, A., per lb. ...	2 0-2 6	Pines, each ...	1 6-3 0
— Muscats, B., per lb. ...	1 0-1 6	Plums in sieve ...	1 0 —
— Belgian, per lb. ...	0 6-1 0	— English, various per sieve ...	0 9-1 3
— Almeira, in brls. ...	10 0-11 0	Green Gages in sieves ...	2 0-4 0
Lemons, case ...	25 0-30 0	Walnuts, good shelled, peck ...	6 6 —
Melons, each ...	1 0-1 6	— in bags... ...	22 0 —
— Valencia, in cases (48) ...	6 0 —		

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus "Fern," bunch ... 1 0-2 0	Lily of Valley, per doz. bunches ... 9 0-15 0
Asters, doz. bunches 2 0-4 0	Maidenhair Fern, per doz. bunches 4 0-8 0
Carnations, per doz. blooms 1 0-2 0	Marguerites, p. doz. bunches ... 2 0-4 0
Cattleyas, per dozen 9 0-12 0	Mignonne, doz. bun. 4 0-6 0
Eucharis, per dozen 2 0-4 0	Montbretias, bunch spikes 1 6-2 6
Gardenias, per doz. spikes 1 6-2 6	Odontoglossums, per dozen ... 4 0-8 0
Gladioli, scarlet, per dozen ... 2 0-5 0	Roses, Red, per doz. ... 1 0-3 0
— white, per doz. 2 0-4 0	— Tea, white, per dozen ... 1 0-3 0
Lilium Harrisii, per dozen blooms ... 3 0-5 0	— Safrano, per dozen ... 1 0-3 0
Lilium lancifolium album, doz. blms. 1 6-3 0	— Catherine Mermet, per dozen 3 0-5 0
Lilium rubrum, doz. 1 0-4 0	Smilax, per bunch 4 0-5 0
Lilium longiflorum, per dozen ... 3 0-5 0	Tuberose, per doz. blooms ... 0 4-0 6

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz. 5 0-7 0	Ferns, small, per 100 ... 4 0-6 0
Arbor-vite, var. doz. 6 0-8 0	Ficus elastica, each 1 6-7 6
Aspidistras, p. doz. 18 0-36 0	Foliage plants, var., each ... 1 0-5 0
— specimen, each 5 0-10 6	Lily of Valley, each 1 9-3 0
Cannas, per dozen 18 0-—	Lycopodiums, doz. 8 0-4 0
Crotons, per doz. 18 0-30 0	Marguerites, per dozen ... 8 0-12 0
Cyclamen, per doz. 8 0-10 0	Myrtles, per dozen 6 0-9 0
Dracenas, var., per dozen 12 0-30 0	Palms, various, ea. 1 0-15 0
— viridia, per doz. 9 0-18 0	— specimen, each 21 0-65 6
Ericas, var., per doz. 12 0-36 0	Pelargoniums, scarlet, per dozen 8 0-12 0
Eponiums, various, per dozen 6 0-18 0	— Ivyleaf, per doz. 8 0-10 0
Evergreens, var., per dozen 4 0-18 0	Spiraeas, per dozen ... 6 0-12 0
Ferns, in variety, per dozen 4 0-18 0	

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Aubergines, per dz. 2 0-—	Mint, new, p. doz. bunches ... 1 6-—
Artichokes, Globe, per doz. 2 0-3 0	Mushrooms, house, per lb. ... 1 0-—
Beans, Scarlet Runners, bush. 1 0-—	Onions, picklers, per sieve ... 3 0-—
— English, dwarf, per bushel ... 3 0-—	— per bag ... 3 0-3 6
— — per sieve ... 1 6-—	— Green, dozen ... 1 6-2 0
Beetroot, bushel ... 1 0-1 6	— cases ... 5 6-6 6
Beet, per dozen ... 0 6-—	— Engl., cwt. bag 4 0-5 0
Cabbages, tally ... 1 0-2 0	Parsley, 12 bunches per sieve ... 0 9-1 0
— dozen ... 0 6-—	Parsnips, incwt. bags 2 6-—
Carrots, new, dozen 1 0-2 0	Potatoes, per ton ... 60 0-80 0
— washed, in cwt. bags ... 2 0-2 6	Radishes, 12 beches. 0 9-1 0
Cauliflowers, per dz. 1 6-2 6	Salad, small, punnets, per dozen 1 3-—
— tally ... 5 0-9 0	Shallots, new, p. lb. 0 2-—
Cress, doz. punnets 1 6-—	Spinach, per sieve ... 1 0-—
Cucumbers, doz. 0 10 1 6	— bushel ... 1 6-2 0
Endive, new French, per dozen ... 1 6-—	Tomatoes, English, new, per 12 lb. 2 0-3 0
— English, score 1 0-1 6	— Channel Islands, per lb. ... 0 2-0 2 1/2
Garlic, new, lb. 0 2 1/2-3 0	— French, crates 2 6-—
Horseradish, English, bundle ... 1 6-2 6	Turnips, new, per dozen ... 1 6-2 0
— foreign, per bundle ... 1 0-1 6	— in bags ... 2 0-2 6
Leeks, per dozen bunches ... 1 6-—	Vegetable-Marrows, per dozen ... 0 6-1 0
Lettuce, English Cabbage, bush. 1 6-—	— tally ... 1 0-1 6
— English Cos, per score ... 1 0-2 0	Watercress, p. doz. bunches ... 0 4-0 6

POTATOS.

Potatoes: Various and Kents, 55s. to 83s. per ton. John Bath, 32 & 34, Wellington Street, Covent Garden.

REMARKS.—Runner Beans, Vegetable-Marrows, Plums, and Apples, are much in excess of the demand, so that prices in some cases are very low. Only a few Apples, Yellow Ingestre Worcester Pearmain, and fine culinary varieties, command the prices quoted above. Blackberries are plentiful, and command about 1s. per peck.

SEEDS.

LONDON: September 19.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market thinly attended, with only a small business doing. Red Cloverseed, although less active this week, keeps firm in value; the total shipments from London to Germany now bulk up heavily. No attention is just now being given to white Cloverseed, whilst neither Alsike nor Trefoil shows any change. As regards Perennial and Italian Rye-grasses there is a strong tone. Trifolium, Tares, and Rye, in the absence of rain, move off slowly. The yield of Vetches this season proves disappointing. No special feature has been developed in the Birdseed trade. Blue Peas and Haricot Beans meet a good sale at hardening rates.

FRUIT AND VEGETABLES.

GLASGOW: September 19.—The following are the averages of the prices recorded since our last report:—Pears, Hardy, Benrre, 8s. to 9s. per crate; Duchesse, 8s. to 11s. do.; Havre Duchesse, 3s. to 3s. 6d. per case; Marie Louise, 4s. to 4s. 9d. do.; Apples, English, large, 12s. to 17s. per cwt.; Medium, 7s. to 10s. do.; Small, 3s. to 5s. do.; Canadian, 12s. to 17s. do.; United States, 10s. to 15s. do.; Peaches, 2s. 6d. to 4s. per dozen; Grapes, English, 10d. to 1s. 2d. per lb.; do., Guernsey, 6d. to 8d. do.; Almeida, fine, 11s. to 16s. per barrel; Melons, 24s. 3s. to 3s. 6d. per case; do., 36s.

1s. 9d. to 2s. 6d. do.; 48s. 2s. to 2s. 6d. do.; Greengages, English, 2s. 9d. to 3s. 6d. per half sieve; Plums, Victorias, 2s. 6d. to 4s. per doz.; do., small, 1s. 6d. to 2s. do.; Scotch, 3s. to 4s. do.; various, 1s. 9d. to 2s. 6d. do.; Californian, 4s. to 5s. per case; Damsons, 7s. to 8s. per cwt.; Bananas, extras, 11s. to 12s. 6d. per bunch; No. 1, 9s. to 10s. do.; No. 2, 7s. to 8s. 6d. do.; Pomegranates, Malaga, 7s. 6d. to 8s. 6d. per case; Lemons, Malaga, 21s. to 24s. per half chest; and 18s. to 21s. per case; do., Naples, 25s. to 36s. per case; do., Palermo, various counts, 5s. to 8s. per box; Cucumbers, 1s. 6d. to 2s. 6d. per dozen; Mushrooms, 6d. to 10s. per lb.; Tomatoes, home, 4d. to 6d. do.; do., Guernsey, smooth, 2d. to 3d. do.; Onions, Valencia, 4s. 4s. to 4s. 6d. per case; 5s. 5s. 3d. to 5s. 6d. do.; Dutch, 2s. 9d. to 3s. per bag.

LIVERPOOL: September 19.—Wholesale Vegetable Market.—Potatoes, per cwt.: Lynn Greys, 2s. 4d. to 2s. 9d.; Bruces, 2s. 9d. to 3s. 3d.; Kidneys, 3s. 6d. to 4s. 3d.; Main Crops, 3s. 6d. to 4s. 3d.; Giant, 2s. 4d. to 2s. 9d. Turnips, 6d. to 8d. per 12 bunches; Swedes, 1s. 3d. to 1s. 6d. per cwt.; Carrots, 6d. to 8d. per 12 bunches; Onions, foreign, 3s. 6d. to 4s. 6d. per cwt.; Parsley, 4d. to 6d. per dozen bunches; Cucumbers, 1s. to 2s. 6d. per dozen; Cauliflowers, 8d. to 1s. 6d. do.; Cabbages, 4d. to 8d. do.; Celery, 10d. to 1s. 9d. do. St. John's: Potatoes, 1s. to 1s. 4d. per peck; Grapes, English, 1s. to 3s. per lb.; do., Foreign, 4d. to 8d. do.; Pines, English, 4s. to 7s. each; Apples, 2d. to 4d. per lb.; Pears, 4d. do.; Tomatoes, 6d. do.; Damsons, 1 1/2d. do.; Cucumbers, 3d. to 4d. each; Mushrooms, 8d. to 1s. per lb. Birkhead: Potatoes, 10d. to 1s. per peck; Cucumbers, 2d. to 4d. each; Damsons, 1d. per lb.; Grapes, English, 1s. 4d. to 3s. 6d. per lb.; do., foreign, 4d. to 8d. do.; Mushrooms, 3d. to 6d. do.

CORN.

AVERAGE PRICES OF BRITISH CORN (per imperial qr.), for the week ending September 15, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.	1900.	Difference.
Wheat	25 4	28 4	+ 3 0
Barley	27 1	25 4	- 1 9
Oats	16 2	17 1	+ 0 11



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period September 9 to September 15, 1900. Height above sea-level 24 feet.

1900.		DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			
SEPTEMBER 9 TO SEPTEMBER 15.	At 9 A.M.		DAY.	NIGHT.	RAINFALL.	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.	LOWEST TEMPERATURE ON GRASS.	
	Dry Bulb.									Wet Bulb.
SUN. 9	W.S.W.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
MON. 10	W.N.W.	60.8	57.4	69.0	49.3	...	59.9	59.5	58.5	41.3
TUES 11	N.	61.2	54.0	65.8	47.6	...	60.1	60.0	58.5	36.9
WED. 12	S.E.	54.2	51.5	69.9	42.0	...	58.4	59.9	58.5	33.2
THU. 13	S.E.	52.6	51.5	69.7	40.9	...	57.6	59.9	58.4	34.0
FRI. 14	E.S.E.	61.5	55.9	65.7	49.5	...	58.2	58.9	58.4	33.4
SAT. 15	E.S.E.	59.9	56.9	70.5	55.0	...	58.8	59.0	58.2	44.2
MEANS...	...	59.1	54.5	68.7	47.6	Tot	59.0	59.5	58.5	37.9

Remarks.—Cool nights, misty mornings, and dull days have prevailed during the past week. No rain has fallen since the 1st inst.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending September 15, is furnished from the Meteorological Office:—

"The weather during this week has been very fine and dry generally, the only rain being confined to the western and northern districts, where a slight fall occurred at the commencement of the period.

"The temperature was rather above the mean in most parts of the kingdom, but only just equal to it over central, eastern, and north-eastern England. The highest of the maxima were registered, as a rule, during the latter half of the week, when they ranged from 84° in Scotland, N. (at Lairg), 78° in Scotland, E., and Ireland, N., and 77° in England, N.W., and the Channel Islands, to 73° in Scotland, W., and to 70° in England, N.E. The lowest of the minima, which were recorded at the middle or on the later days of the period, varied from 33° in Scotland, W., and 34° in England, S.W., to 59° in England, E., and to 52° in the Channel Islands. The diurnal range of temperature was large at many inland stations; at Lairg on Friday and Saturday it was as much as 45°.

"The rainfall was much less than the mean in all districts. The greater part of England and the South of Ireland were quite rainless.

"The bright sunshine was again very prevalent, and much above the normal in all districts. The percentage of the possible duration ranged from 75 in the Channel Islands, 72 in England, S., and 70 in Ireland, N., and England, N.W., to 52 in Scotland, N., and 46 in England, E."

ENQUIRY.

SUNFLOWER FARM.—"A. S. H." would like to know where in these islands a Sunflower farm exists. He understood that there was one near Littlehampton.

GARDENING APPOINTMENTS.

MR. F. L. THURSTON, for the past three years Foreman in the Gardens, Burwood House, Cobham, Surrey, as Head Gardener to A. MORRIS, Esq., Court Green, Streatham, S.W.
MR. B. L. HAMMETT, as Head Gardener to R. H. CLAY, Esq., M.D., Wembury House, near Plymouth.
MR. WILLIAM HADDOCK, for the past two years General Foreman in the Gardens, Castle Boro, Co. Wexford, as Head Gardener to Lord ARDILAUN, Ashford House, Cong, Co. Galway.
MR. FRANK NOYCE has been appointed, through Mr. H. W. WARD, of Rayleigh, as Gardener to Captain E. A. ANDOCK, R.N., Redlands, Broadstairs.
MR. ARTHUR MELVILLE, sen., Foreman in the gardens, Drumlanrig Castle, as Head Gardener to Sir ERNEST CASSELL, Moulton Paddocks, Newmarket, taking up his duties immediately.
MR. JOHN DICKSON, from the nurseries of Messrs. CUNNINGHAM, FRASER & Co., Comely Bank, Edinburgh, and late Foreman at Douglas Castle, Lanarkshire, as Head Gardener to Duchess ADELINA of BEDFORD, Chenies, Rickmansworth. The situation was obtained for him through Mr. INGLIS, gardener at Drumlanrig Castle.
MR. E. J. DAY, for the past eleven years Head Gardener at Barwell Castle, Somersetshire, as Head Gardener to Mrs. HARRIS, Stevenston Manor, near Whitechurch, Hampshire.
MR. C. BURRIS, late Gardener for J. GREGORY, Esq., Egam View, by Sheffield, as Head Gardener to A. LEIGH, Esq., Mayfield, Shorthlands, Kent.
MR. FRANCIS FENNA, General Foreman for the last five years at Penrhyn Castle, Bangor, N.W., as Gardener to the Hon. VICTOR CAVENDISH, Holker Hall, Lancashire.

CATALOGUES RECEIVED.

BULBS, &c.

A. CROSS & SONS (Limited), 19, Hope Street, Glasgow.
THOS. KENNEDY & Co., High Street, Dumfries.
HARRISON & SONS, Market Place, Worcester.
ROBERT VEITCH & SON, 34, High Street, Exeter.
BEN. REID & CO., LTD., Aberdeen.
JOHN RUSSELL, Richmond Nurseries, Kew Road, Richmond, Surrey.

MISCELLANEOUS.

THOMAS RIVERS & SON, Sawbridgeworth, Herts—Fruit Trees, Roses, and Shrubs.
JASQUES HAASLACH, Nimes, France—Garden Seeds.
R. VEITCH & SON, Exeter—Fruit Trees, and Hardy Trees and Shrubs.
J. GRIEVE & SONS, Redbraes Nurseries, Broughton Road Edinburgh—Nursery Stock.
CHR. LORENZ, Erfurt, Germany.—New varieties of Vegetables and Flowering Plants.
H. J. JONES, Ryecroft Nursery, Hither Green, Lewisham.—Bulbs, &c.

ANSWERS TO CORRESPONDENTS.

APPLES CRACKING: S. The cracking of the flesh and skin is due to great dryness of the soil, and the corky formation in the cracks is merely an effort of Nature to remedy the mischief. The rind of the fruits sent is attacked by a fungus, Mucor stolonifera. The remedies are copious applications of water to the soil now, and occasionally during the winter; and the use of the Bordeaux Mixture on the foliage and fruit during the growing season, the first application being made when the fruit is as big as a Hazelnut. All affected fruits should be collected and burnt.

BLUEBOTTLE FLIES IN VINERY: Amateur. You may scare them away by hanging up slabs of carbolic preparations (sanitary); trap them in bottles and double hand-glasses, with fruit baits placed in them, or keep them out by tacking hexagon netting over the openings.

CRATEGUS ON CHALKY SOIL: *Rus in Urbe*. There are seedling varieties of this species without spines; others with a few, and one with large, straight spines (macrantha). *C. Azarolus* is a native of south of Europe, the Levant, and we know of no "Thornless American Azarole." A nurseryman's name, probably. *C. Azarolus* has more or less numerous strong spines, and large red or yellow, globose fruits, which are agreeable eating. Can you not send a leafy shoot and fruits for our inspection of the *Crategus* you observed at Beckenham? Thorns are not particular as to soil, provided it is of a fair depth. Chalk is not injurious to them.

DISEASED MAGNUM BONUM POTATOS: *Carbo*. If not too late, we would advise you to spray the haulms well with the copper sulphate, or, better still, the Bordeaux Mixture, made according to the formula we have so often published in these pages. The growth of the plants cannot be finished as yet, and by pulling up the tops, as suggested, there will be a considerable loss of weight in the crop. Only in the event of the attack of disease being virulent should this be done. To dress the soil with Bordeaux Mixture would do good in destroying spores of the Potato disease. Only in the case of the tubers being exposed to the light, or as a protection against frost if they are left a long time in the ground, would it be necessary to take up alternate rows, and use the soil of these rows to cover those that remain. Flowers-of-sulphur is not so effectual a remedy as Bordeaux Mixture. Disease is transferred from the leaves to the tubers rather rapidly in rainy weather. We cannot, however, say in how many days. It would depend upon the nature of the soil and the depth of the moulding-up; whether it had been done according to Jensen's methods, that is with the spade, and the soil beaten smooth; or if it was left just as drawn up by the hoe.

EULALIA: *A. J. M.* There is yet time to divide the root-masses; pot them and get them established before winter sets in. The early spring is likewise a suitable season for increasing the stock of plants in this manner: keep the plants close for a week or ten days in a cold frame, then afford air by degrees, and winter in a greenhouse. If you do not divide too severely you will have good plants in May.

GREENFLY ON MELON PLANTS: *G. Winch*. Mild fumigation with tobacco or some of its preparations would clear the plants of the insects, each fumigation being followed by copious syringings of clear warm water. Greenfly infesting Melon or Cucumber plants growing in ordinary pits and frames with tight-fitting lights can be destroyed with freshly-bruised leaves of the common Laurel put into the frames at 6 P.M., and leaving them there for twelve hours. A second lot should be used three days later. The quantity of leaves need not exceed 1 lb. per light for frames and pits of ordinary size.

INSECTS: *Edmund Bland*. Your insect is one of the rarer Longicorns, or wood-boring beetles—*Saperda carcharias*, Lin., said to be commoner in the fen country than elsewhere.

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that **not more than six varieties** be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.—*F. H. Apple*, Duchess of Oldenburgh; Plums, 1 and 2, Victoria.—*Anxious*. 1, Herefordshire Beefing; 2, Duchess of Oldenburgh; 3, Early Red Calville; 4, Irish Peach; 5, Court Pendu Plat; 6, Flat Nonpareil.—*Chad*. Pears: 1, if the fruits sent (about the size of marbles) are a fair average, the variety is not worth a name. It is unknown to us; 2, Fondante de Cuerné; 3, Fondante de Charneux; 4, a poor example of Hesse; Apples: 1, Red Astrachan; 2, Irish Peach; 3, not known.—*J. B., Kent*. 1 and 5, quite rotten. Send better specimens, carefully packed; 2, St. Denis; 3, Beurré Précoce; 4, Louise Bonne of Jersey; 6, Beurré Benoît.—*J. Z., Wales*. Affixing the labels to fruits by means of nails thrust into the eyes is

a most unsatisfactory method; a valuable character is thus entirely destroyed. 1, Flanders Pippin; 2, Ribston Pippin; 3, Alfriston; 4, Calville Rouge de Micoind; 5, retained for further comparison; 6, Oslin, or Golden Apple.—*A. F. T., London*. 1, Charles Van Mons; 2, Durondeau; 3 and 5 are unknown. In the first consignment, the Pears sent with these numbers attached were identical, those now sent are distinct; 4, Beurré Bosc; 6, Beurré de Mans.—*T. S., Herts*. 1, Dunmore; 2, Hornmead's Pearmain; 3, A small fruit of Reinette Grise; 4, Nonsuch; 5, Scarlet Nonpareil; 6, Summer Golden Pippin.—*T. F., Bradford*. Grape No. 1 is West St. Peters; 2, Black Alicante.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*Clematis*. *C. campaniflora*.—*J. J. Foster*. 1, *Crategus crus-galli prunifolia*; 2, *C. sinaica*; 3, *C. monogyna* var. (without fruit); 4, *C. crus-galli prunifolia*; 5, *C. monogyna* (cannot say var. without fruit); 6, *C. mollis*; yes, the *Pyrus* is *P. pinnatifida*.—*H. G. Rogers, King's Lynn*. 1, *Pseudotsuga Douglasii*; 2, *Cedrus* (cannot name species from such a scrap); 6, *Cupressus pisifera* var. *squarrosa*; 9, *Thuja orientalis*; 10, *Thuja occidentalis*; 11, *Cupressus Lawsoniana*; others next week.—*A. Corps, Hawkhurst*. 1 and 2, *Thuja orientalis* var.; 3, *Cupressus plumosa aurea*; 4 and 5, *C. Lawsoniana*; 6, *C. pisifera* (*Retinospora pisifera*).—*A. M.* 1, *Helianthus decapetalus*; 2, *H. multiflorus*; 3, *H. strumosus*; 4, *H. multiflorus*; 5, specimen too withered.—*H. Kempshall*. 1, *Asarum europæum*; 2, we cannot name this without flowers; 3, *Clematis graveolens*; 4, *Lonicera etrusca*; 5, *Pentstemon centranthifolius*; 6, *Aristolochia Siph.*—*W. Macpherson*. 1, *Phacelia tanacetifolia*; 2, *Dicentra formosa*; 3, *Oxalis corniculata* var. *rubra*; 4, *Lysimachia ciliata*; 5, *Veronica spicata*; 6, *V. virginica*.—*F. G. Chaenostoma hispidum*.—*A. Goodwin*. 1, *Pterocarya caucasica*; 2, *Crategus oxyacanthoides*; 3, *Myrica cerifera*.—*D. K.* Known in gardens as *Anthericum lineare variegatum*.—*Old Subscriber*. 1, *Polypodium aureum*; 2, *Grevillea robusta*; 3, *Davallia canariensis*; 4, not a fair specimen; 5, *Dracena intermedia*; 6, *Aspidistra lurida variegata*.—*Alpha*. *Impatiens Noli-metangere*.—*W. C. & Son*. *Pterocarya caucasica*.—*W. G., Yorks*. *Miltonia Clowesii*.—*J. R., Sydneyham*. 1, *Odontoglossum pulchellum*, the worst form of it; 2, *Geranium sylvaticum*.—*C. J. P.* 1, *Chrysocoma comauera* (Goldie Locks); 2, *Ligustrum lucidum*.—*G. C.* *Cattleya Loddigesii*, the malformed flowers are very singular.—*E. M.* *Tecoma* (*Bignonia*) *radicans*.—*Alpha*. It is not possible to name the specimen without seeing a flower.—*G. W.* 1, *Lycium barbarum*; 2, *Pterocarya caucasica*; 3, *Polygonum cuspidatum*; 4, *Selenipedium Sedeni*; 5, a *Melastoma*, send flower.—*Dilkasha*. The Ferns are: 1, *Athyrium filix-femina*; 2, *Lastrea dilatata*. Other plant next week.

ODONTOGLOSSUM CRISPUM: *A. L. J.* The orange-coloured grubs feeding under the epidermis of the leaf are Dipterous; but in the absence of the perfect insect we are unable to fix the species. Remove the badly-eaten leaves, and pinch the grubs in those you cannot afford to cut away.

PARMA VIOLETS: *G. W. E.* The market here is rather over-stocked in the season with Parma Violets coming from the south of France, and other varieties such as those you mention, and we would advise you to get clients in other cities as well. The best prices are realised in the season December-April; after that the price gets very low. English growers have not competed with the Frenchmen for the good reason that the climate and enforced frame-culture here handicap them, but they "come in" when the foreign supplies fall off. We think that the name of the "nursery" is very suitable—not "nurseries."

PEACH LEAVES WITH "SHOT-HOLES": *Scotica* says "the tree has been syringed with soapy-water and paraffin, the leaves have become blotched and spotted, and they drop frequently." Examination with the microscope revealed the Peach shot-hole fungus (*Cercospora circumscissa*), a recognised cause of the shot-hole, or dry brown spots, which easily drop out from an otherwise green leaf. A valuable paper by Mr. B. M. Dugger, of Cornell University (1898), gives his "observations on the shot-hole effect on foliage of the genus *Prunus*." He there shows that shot-

holes are not only produced by several minute fungi (including *Cercospora*), but may equally well be caused by spraying with mixtures which are too strong or incorrectly made; premature loss of foliage may follow from either of these causes. Peach foliage is tender, and is easily injured by spraying solutions, hence when these are used they should be considerably diluted below the strength recommended for most plants. The loss of leaves so early in the season will produce immature wood, and probably affect the crop next year. All fallen leaves should be collected and burnt, as they form a suitable nursery for fungi.

PEACH LORD PALMERSTON: *T. W. H.* This is a large coarse-fruited variety, of third-rate quality. The quality of the fruits is best when the trees are grown in moderate heat, and are thoroughly ripened each season. But we cannot recommend the variety. The fruits you send us are large and worthless.

PEAR AND CHERRY-TREES INFESTED BY INSECTS: *Paul Klameth*. The creatures sent are Slugworms—the larvae of *Selandria atra*, a sawfly. Dust the trees with quicklime in powder repeatedly; one dressing not being sufficient, owing to the slugworm exuding a coating of slime, and thus slipping out, as it were, of the coating—but it cannot continue this process, and the second or third dressing kills them. Tobacco water, and strong lime-water with soft soap intermixed will destroy them. The soil under the infested trees should be skimmed off and charred or buried deeply in the earth, the cocoons being found on the surface, and to a depth of four inches. The cocoons are little earth-coloured bulbs of tough fibre.

SOLANUM CAPSICASTRUM DISEASED: *G. W.* The fungus on the shoots sent is the Tomato-leaf Rust (*Cladosporium fulvum*). We have previously found it, as in your case, on other species of *Solanum*. No doubt, as you suggest, forcing treatment has rendered the young shoots susceptible to attack. The fungus is not difficult to check. You say it occurs as yet only here and there; then prune off the parts where it occurs. Spraying with potassium sulphide ($\frac{1}{2}$ oz. in each gallon of water) is generally successful with Tomatos, if begun early; but with your *Solanums* it might be well to try this strength on a plant or two, to ascertain whether it does damage to the foliage, if so, more water must be added. If the same house, or a Tomato-house, is to be used next year for this plant, it should be previously washed down with a disinfectant.

TOMATOS: *Tugela*. The fruits are badly attacked by the fungus, *Cladosporium lycopersici*, known commonly as the Black Spot fungus. It is too late to benefit the present crop by spraying, and the best advice we can give you is to remove affected fruits as soon as they are discovered. When growing another crop of such plants, it will be well to spray them occasionally during the period of their growth with the Bordeaux Mixture.

WALLFLOWERS: *T. G.* The roots are "clubbed," owing to the attacks of the grub of a weevil—*Centorrhynchus sulcicollis*—a creature about an eighth of an inch in length. The weevil lays its eggs in holes made with its proboscis, usually one in each. The grubs, which are thick and legless, and much wrinkled and whitish, soon cause the formation of a gall or irregular swelling, as in the case of the Wallflower roots, and in those of Cabbages and Turnips. The whole of the sickly-looking plants should be pulled up, after moistening the seed or nurse-bed, and put on the smother-heap, or into a boiler-furnace. The infested land should be heavily dressed with gas-lime, which should be allowed to lay on the surface for a month at the least; it may then be dug in, it having become changed by exposure to the air to sulphate of lime. Gas-lime may safely be employed at the rate of 1 lb. per square yard.

COMMUNICATIONS RECEIVED.—Crystal Palace Co.—*A. M. D.*—*E. F. T.*—*J. O.*—*H. W.*—*A. C. H.*—*T. M.*—*F. R.*—*A. T.*, Birmingham.—*W. B. H.*—*R. B. Allwork*.—*R. D.*—*A. D. W.*—*W. W. & Sons.*—*F. U. & Co.*—*C. W. D.*—*A. K. D.*—*W. S. S.*—*R. J.*—*Winton*.—*H. H. C.*—*W. G. B.*—*E. F. B.*—*H. M.*—*Chiswick*.—*A. P.*—*T. L.*—*W. J. G.*—*F. B. C.*—*Dr. M. T. M.*—*Begonia*.—*G. A.*—*W. T.*—*Lincoln*.—*A. Derry*.—*Hersal*.—*W. G.*—*J. R.*—*T. Stoner*.—*J. Conchault & Cie.*—*Flowers*.—*F. W.*—*W. M.*—*S. A.*—*A. C. F.*—*W. K.*—*E. J.*—*J. W.*—*W. R.*—*H. W.*—*G. R. M.*

SPECIMENS, PHOTOGRAPHS, &c., RECEIVED WITH THANKS:—*Rev. E. Lascelles*.



VIEW IN THE GARDEN AT THE HÔTEL DU PARC, CANNES.



THE

Gardeners' Chronicle

No. 718.—SATURDAY, SEPT. 29, 1900.

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HORTICULTURE IN HUNGARY.

HUNGARY has not played a very prominent part in the horticultural movement, so far, at all events, as any published record shows. Loudon, in his *Encyclopædia of Gardening*, dismisses the subject in a single paragraph. His information, it is true, was second hand, but his acquaintance with all books of travel bearing on his subject was so extensive and thorough that it is doubtful even if he had visited the country, whether he could have elaborated the writings of others to any considerable extent.

Townson, in his *Travels in Hungary* in 1793, mentions Count Vetzky as laying out his grounds in the English style, aided by a gardener who had been for some time in England; he also speaks of the gardens of Count Esterhazy of Galantha, at Totis, as very fine, and those of the Bishop of Erlau, at Felcho-Tarkar, as romantic.

A later observer, Dr. Bright, in his *Travels from Vienna Through Lower Hungary* in 1815, mentions Körmond, the property of Prince Bathiany, as "containing a very handsome garden in the French taste, with considerable hothouses and conservatories." Count Brunswick, of Marton Vassar, had his gardens laid out in the English style; and the favourite mansion of Prince Esterhazy, at Eisenstadt, is described as having gardens, which were in 1754 laid out in the French taste, and transformed in 1814 into the English manner. The backwardness of Hungary in horticulture is largely due to the political convulsions which have marked the history of this polyglot country.

Thanks to the patriotism of M. Igraz

Darányi, the Hungarian Minister of Agriculture, and to the industry of Dr. Charles Schilberszky, the Professor at the Royal Hungarian School of Horticulture at Budapest, the future Loudon will not have to deplore the want of a concise record of the progress of the art in Hungary. Dr. Schilberszky's *Monographie de la Horticulture en Hongrie*, nominally compiled for the Hungarian Pavilion at the Paris Exposition, may be described as the most important in its way of the large army of pamphlets and books which the Exposition has called into existence. It forms a substantial quarto of sixty-four pages, with sixty-two full page plates *hors text*.

The history of horticulture in Hungary may be conveniently divided into five periods: (1), Before the occupation of the country by the Hungarians; (2), at the time of the Kings of Anjou; (3), from the dominion of the Kings of Anjou to 1514; (4), from 1514 to the end of the eighteenth century; and (5), during the nineteenth century. In the first period the history is naturally misty, but Dr. Schilberszky has contrived to obtain a few facts; in the second, the records turn largely on the works of the monks, for a necessary pendant to a monastery was a garden. The Benedictines, the Cistercians, and the Premonstrants were all equally keen on the subject of gardens, and to them is due the credit of fostering and developing the cultivation of fruit, vegetables, and flowers. We get a few definite facts relative even to gardening in Hungary in the thirteenth century, for Dr. Schilberszky quotes a statement, published by Fehér in the fourth volume of *Codex Diplomaticus*, in which it appears that the King, Bela IV., in 1256 made a present to eight inspectors of his gardens of the "*propriété fourrière*" of Zud in the department of Hont. At this period, and probably for long after, the fruit-garden was the chief feature in what was doubtless regarded as a phase of agriculture, and at the head of the fruits came "the national tree" of the Hungarians, the "Noyer" Walnut. Other fruit-trees mentioned in the earlier records include the Apple, the Pear, the Cherry, the Prune, the Sorb, the Chestnut, the Dogberry, the Mulberry, and others, so that in the matter of fruit the mediæval inhabitants of Hungary were not badly off.

During the third division of time, and under the reigns of Charles, Robert, Louis the Great, and Sigismund, and especially under Matthias Corvinus, the pleasure garden developed very considerably, for the nation itself had attained to a certain standard of civilisation. The pleasure gardens were almost exclusively in the Italian style; and one of the most important was that of the royal fortress of Visegrád, the barren rocks of which were converted into pleasant gardens by the king, Robert Charles. It is, it seems, this garden which produced the material of the celebrated perfumes of the Queen Elizabeth, which is known even now as the *Aqua Regina Hungarica*. These gardens were visited by the King of Poland, Jagiel Ulászlo, when the guest of Sigismund, in 1412, as may be seen from a passage in the *Historia Poloniae*, by János. They were greatly embellished by Matthias Corvinus, who also constructed the gardens of the Royal Château at Buda. Indeed, as became an enlightened king and scholar, this eminent man indulged in a passion for parks and gardens in various parts of his kingdom, notably at Diósgyör and at Tata. His example was widely followed by eminent prelates and by noblemen. Fruit-culture made great strides during this period,

and a large number of varieties of different kinds of fruits were imported. One writer—Jean Czukur—states that, at this early period, there were cultivated in Hungarian gardens 76 varieties of Apples, 61 of Pears, 21 of Plums, and 12 of Cherries.

The three centuries comprised within the fourth division of time, i.e., from 1514 to the end of the eighteenth century, included the period of devastation caused by the invasion of the Turks, who however introduced many important varieties of fruit into the conquered country, notably, Apricots from Asia Minor, and several sorts of late Grapes. The beautiful *Nymphæa Lotus* is also believed to be one of their introductions, and many other plants regarded as indigenous to or raised in Hungary are now considered by the best authorities as Turkish introductions; so that, if the yoke of the oppressor was hard, it had, at all events, some corresponding advantages. At the latter part of the seventeenth, and the earlier part of the eighteenth century, horticulture, but more particularly fruit culture, was largely in the hands of the clergy; indeed, the first gardening book in the language was written by a Jesuit priest, Jean Lippai. Fruit culture made rapid strides under the Queen Marie-Thérèse, and under her son, Joseph II.; the latter, by a royal edict, in 1782, encouraged the planting of fruit-trees by the roadsides. It was in his time also that the Botanic Garden of Szarvas was founded, and in 1785 the first "*Société de Pomologie*" was founded at Jolsva, in the Comitatus of Gömör. In spite of the impetus given to gardening activity by the Esterhazy and Kraszkovics families, the duration of this activity was comparatively short, and towards the close of the last century very few new gardens were constructed.

At the commencement of the present century the landlords of mountainous parts of the country, as in the Carpathians, and in Transylvania, had extensive orchards, and exported, principally to Poland, large quantities of excellent fruit; in due time orchards began to be formed also in the centre of the country. This movement was encouraged and imitated by the leading Hungarian nobles, such as Brunswick, Forray, Batthyány, Károlyi, and Pálffy. But it is only during the last thirty years of the present century that horticulture in Hungary has made rapid and universal strides. Enormous sums have been spent, and great sacrifices made by many of the chief landed proprietors, with the result that to-day one meets in nearly every part of Hungary with public and private gardens and parks, which will compare favourably with those of other European countries.

Among the great landed proprietors of the kingdom whose gardens are remarkable, the Archduke Joseph may be cited first, who, at an immense sacrifice, and the outlay of several million of florins, has converted the Isle Marguerite (Magarethen - Insel), which has been so happily termed "the Pearl of Budapest," into a very beautiful park and garden, with an area of 140 arpents (an arpent is rather less than an English acre). This island was the park of the kings of the house of Arpad when it was known as Hare Island; it was subsequently inhabited by various religious orders, and numerous ruins of their buildings may still be seen. In 1790 the Archduke Alexander bought the island, and five years later it became the property of the Palatine Joseph; in 1847 it belonged to the Archduke Etienne, at whose death in 1867, it was inherited by the present owner. The five full-page plates published by

Dr. Schilberszky, give a very fair idea of the romantic beauty of this place. The Archduke's English park at Alsóuth, comprises about 150 arpents, and includes a collection of Orchids said to be the richest in the kingdom ; whilst at a villa

gardens than even the Archduke, for at Főth, the Count Alexandre Károlyi has 398 arpents, and at Marton Vár, Antoine Dreher has 380 arpents. The other owners of extensive gardens are the Count Theodore Andrássy,

Budapesth has naturally played an important part in the progress of Hungarian horticulture. It was founded in 1849, and extends to about 26 arpents. It was arranged under the supervision of Endlicher and Unger, and the number of



FIG. 68.—*DENDROBIUM PHALAENOPSIS SCHRODERIANUM*, AS GROWN BY MR. STEVENS AT WALTON GRANGE GARDENS.
(SEE P. 240.)

at Fiume, near the seacoast, the winter residence of the family, he has an extensive collection of Conifers which covers about 8 arpents. The area of his parks and gardens is placed at 348 arpents. But two other great landed proprietors can claim more extensive parks and

with 150 arpents at Töke-Terebes ; the Count Franz Esterházy at Tata, with 135 arpents ; at Csálsvár, the Count Nicolas Maurice Esterházy has 117 arpents ; and at Kapuvár, Prince Nicholas Esterházy has 43 arpents.

The botanic garden of the University of

plants now grown there amounts to about 6,000 ; the arboretum is laid out in the English style, and is very rich in varieties. The land devoted to gardening in the Hungarian capital is placed at 1,707,613 square metres in the ten arrondissements ; these are under the supervision of

one head gardener, and six assistants, under whose superintendence the necessary work is carried out by labourers. The cost of maintenance is placed at 198,831 florins.

In 1897, the Hungarian Minister of Agriculture, M. I. Darányi, created a special

the most suitable fruits for particular districts; the varieties selected were cultivated in these State nurseries, and propagated in large numbers. There are twenty-two establishments of this description in various parts of the country, occupying an area of 219 hec-

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FIG. 69.—DENDROBIUM PHALAENOPSIS VAR. HOLOLEUCA. (SEE P. 240.)

department for the direction of affairs relative to horticulture generally, and to fruit culture in particular. This department includes two inspectors, and two travelling instructors. The establishment of State nurseries was another exceedingly wise and helpful movement, the object being to decide which were

tares. One of the largest of these nurseries is at Torda, where the annual output of grafted trees is placed at 400,000. The prices are fixed by the Minister himself, and range from about sixpence to eightpence each for half-standards or standards, as the case may be. Last year nearly a quarter of a million

The strides which horticulture has made in Hungary during the past thirty-eight years is reflected in the annual budget. In 1862 its charge on the budget was 28,000 francs; last year it was 527,000 francs.

Had space permitted, I should like to have made a brief reference to the activity of the

horticultural societies, to the teaching of horticulture in Hungary, and to many other points of equal interest. But perhaps enough has been said to indicate the value of Dr. Schilberszky's *Monographie*, and of the rapid progress which horticulture has made in Hungary within recent years. *W. Roberts.*

BERNE.

THE city is so full of interest, so delicious in its quaintness, so beautifully situate, that the ordinary visitor is likely to overlook the Botanical Garden. Nevertheless, it has a charm of its own which appeals to all plant-lovers. In the first instance, it is beautifully situate on a wooded slope descending to the green waters of the rushing Aar, and overlooking the brown roofs of the mediæval city on the opposite bank. Few, if any, botanic gardens can claim so beautiful a site. In point of size it is not extensive, nor, in its upkeep, will it rival more ambitious gardens in other cities, where the expenditure on labour is greater than apparently it is here. The few span-roofed houses stand on a plateau in front of the Botanical Institute directed by Professor Fischer. Just now they are all but empty, the occupants being not yet returned to their winter quarters.

As is usual in such establishments, one wonders how it is possible to cram all these plants in pots and tubs into the houses devoted to their reception during the winter. A fine plant of *Tupidanthus calyptatus* in fruit attracted our attention in this department. A small tank adjacent is occupied by some of Marliac's hybrid Water-Lilies, together with other aquatics. A very effective circular bed here has a plant of *Musa Ensete* in the centre, surrounded by a circle of tall *Cyperus papyrus*, bordered in their turn by the bold foliage of the *Colocasias*, and the circumference formed by a narrow tank of water filled with beautiful Water-Lilies—a very beautiful and effective combination. Here also are some rock mounds, with "pockets" for alpine and succulent plants. One such mound is devoted to Swiss alpine plants, another to the alpine plants of other parts of Europe, the Caucasus, the Himalayas, and other mountain districts.

At the time of our visit, towards the end of September, there were few, if any, of the plants in bloom, unless perhaps *Linaria alpina*, which we had seen a few days previously at Wengern Alp and elsewhere. Judging from the foliage and the accompanying labels, we should think these rockeries would be very interesting in early summer. In the herbaceous ground, among other curiosities is a collection of terrestrial Orchids, and of species of *Orobanche* and allied plants—over, of course, for the season, but very suggestive.

In another part of the garden is a second aquarium, with *Papyrus*, *Arundo Donax*, and other ornamental plants encircling a pond filled with choice Water-Lilies and other aquatics, among which *Trapa natans* was remarkable for the deep red colour of its foliage.

There is hardly sufficient space for an arboretum, but some of the commoner trees might be removed and replaced by species of greater interest. The garden is open to the public from morning to night, and though small and unpretending, is a delicious resort for the Berne public, and of great interest to the botanical visitor. *The Rambler.*

NEW OR NOTEWORTHY PLANTS.

LÆLIO-CATTLEYA × COLMANIANA.

IN this grand hybrid, raised by Messrs. F. Sander & Co., and named in honour of Jeremiah Colman, Esq., of Gatton Park, Reigate, we have a striking example of the good results which may be obtained by employing a fine form of some well-known good hybrid; in this case the hybrid was the handsome *Lælio-Cattleya* × *Arnoldiana*, for

which Messrs. F. Sander & Co. received a First-class Certificate at the Royal Horticultural Society on June 9, 1891, and which on account of its reputed parentage between *Lælia purpurata* and some form of *Cattleya labiata*, has been considered a fine form of either L.-C. × *bella* or L.-C. × *eximia*. The other plant was *Cattleya Dowiana aurea*, which never fails to impart richness of colour, size, and fragrance to the flowers of its descendants.

In size and form L.-C. × *Colmaniana* ranks with the finest of the showy *Lælio Cattleyas*. The sepals and petals are of a soft, clear rose-colour; and the petals, slightly darker than the sepals, exhibit a delicate obscure veining. The entire front portion of the lip, which is crimped and undulated at the margin, as in *Cattleya aurea*, and of a rich purplish-crimson, is slightly darker in the centre, which latter is velvety. The interior of the throat is of a bright chrome-yellow tinge, with orange-hued lines beneath the column, and radiating towards the sides, where there are large, clear yellow blotches. The exterior of the lip is soft-yellow, changing to white, and shaded with rose-colour. *James O'Brien.*

PLANT NOTES.

SOLANUM TOMATILLO.

THIS rather nice plant, of which seed came to me from the Botanic Garden of Santiago, Chili, is now in flower in the open. Under glass it produced its bloom panicles pretty continuously throughout the winter. But seedlings left out-of-doors without protection, though cut down to the ground by the frost, have proved hardy, and are now 3 to 4 feet high. The flowers are not unlike those of the Potato, but are smaller and of a better purple. The plant is subshrubby in habit, and can be easily propagated from cuttings. *A. K. Bulley, Neston, Cheshire.*

DENDROBIUM PHALÆNOPSIS SCHRODERIANUM.

TEN years' experience of this charming Orchid, for whose introduction in quantity gardens are indebted to the enterprise of Messrs. F. Sander & Co., has resulted in its steady increase in favour; and for some years past it has been the most elegant and showy Orchid at this season in cultivation, its usefulness being enhanced by the great variety of colour shown in the different forms, which vary from the wholly pure white *D. P. hololeuca* (fig. 69, p. 239) and the blush-white *D. P. Rothschildianum*, through all the shades of rose and light purple to the dark-coloured varieties. The plant, too, has the merit of being easy to cultivate, and very free to flower, and much success is attained with it even in collections where commoner *Dendrobiums* are not satisfactory. A case in point is to be found at the present time in the collection of Geo. C. Raphael, Esq., Castle Hill, Englefield Green (gr., Mr. H. Brown), where one side of a house is arranged with splendid plants of *D. Phalænopsis Schroderianum* in flower, some of the spikes bearing upwards of twenty flowers open at the same time, and all the plants differing from each other in some degree in the colouring of the flowers. Among these are plants of the first importation, which have been retained in perfect health, although during the time several kinds of the Burmese *Dendrobiums* have degenerated. Here, as in other gardens, the plants are found to thrive best in comparatively small Orchid-pans or baskets, suspended in a warm house which is kept moist during the growing season, at which time also a liberal supply of rain-water at the root is given. The plants are subjected to a good light, and a fair amount of sunlight is admitted.

Our illustration (fig. 68, p. 238) was taken from the collection of W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr., Mr. W. Stevens), and gives a good representation of an effective

display of the plant; and the other (fig. 70, p. 241), a very distinct form of *Dendrobium Phalænopsis Schroderianum*, shown by Messrs. F. Sander & Co. in their group of these plants at the Royal Horticultural Society's meeting on September 11. The flowers of this form are white, with a slight blush tint, the stripes on the lip being claret colour, which, contrasting with the white sepals, petals, and ground-colour of the lip, constitutes it a very distinct variety. The flowers, moreover, are large, and of good shape.

Full cultural instructions for *D. Phalænopsis* and others of its section will be found in the *Orchid Calendar* of our last issue, September 22, p. 224.

FLOWER-GARDENING AT HAMPTON COURT PALACE.

OWING much to the abundant rains of the summer months, which not only helped to keep the lawns green, but also everything in beds and borders fresh looking, rarely have these popular gardens been seen in a more beautiful condition than this summer. The Palace and its gardens seem to constitute a greater attraction every year, for visitors arrive in immense numbers all the season. It is no wonder; for apart from the interest which attaches to Wolsey's grand Palace, and the adjoining noble river, the gardens of the Palace, and the great expanses of the Home and Bushey Parks, with their splendid trees, constitute one of the finest places of public resort to be found in the whole world.

During the past few years a great change has been effected in the style of flower-gardening seen here. Certainly the long, very long, border fronting the south side of the great parade, is as hitherto all too narrow for its length, and sadly needs widening. But whilst in one part about the Palace it is margined with the graceful silvery *Dactylis*, with which are interspersed the bluish flowers of *Viola Bluebell*, a combination which always forms a pleasing edging here, the inner portion is filled to the utmost with all sorts of hardy perennials, *Hollyhocks*, *Dablias*, annual *Asters*, *Stocks*, *Zinnias*, *Petunias*, *Fuchsias*, *Cosmos*, *Calliopsis*, *Marigolds*, *Hydrangeas*, and many other plants, in wondrous variety; so that something fresh and pleasing is furnished at every step. Towards the river, where there is no edging, hardy plants are in greater force, and the border is indeed charmingly varied and gay. On the lawn the large beds remain in form very much as they have been for many years. The method of disposing them is, without doubt, most in harmony with the straight formation of the walks and the great parade, and certainly admits of their contents being displayed to the best advantage.

The variations found in the bedding, not only in design or combination, but also in style and material, compare most favourably with the very stiff formal bedding once so common. Seldom now are seen mere masses of any one colour. Blending and toning seem to be the effort of the superintendent, Mr. Gardiner, and in no gardens is found now, an unpleasing overpowering glare of colour. Dean Hole's famous Parsley-bed can be dispensed with, as a refresher to the eye at Hampton Court.

Of a few beds selected for notice out of so many, the most telling, to my mind, is composed of that beautiful small-flowered double crimson-scarlet *Begonia La Fayette*. This, without exception, the most effective bedding *Begonia* in cultivation, is represented by strong plants put out thinly on a dense carpet of variegated *Mesembryanthemum cordifolium*, and has thinly placed plants of *Abutilon Sawitzi* and variegated *Vitis*, with green dot-plants of *Eulalia*, that are most graceful. Two round beds opposite the garden entrance are planted with small-flowered double-flowered scarlet *Begonias*, intermixed with *Centaurea candidissima*, on a carpet of golden *Creeping Jenny*, a few orange-coloured pyramidal *Celosias* helping to vary the colouring. These beds are quite charming. In

some of the large oblong beds are many fine, mixed, double-flowered Begonias, the richer-coloured ones showing the better growth. These are planted on golden Alternanthera, with Leucophyta Brownii, a few Silver-leaved Fuchsias, and some of the tall green Eulalia intermixed. There are also two large beds, planted chiefly with strong, single-flowered Begonias on carpets of Königa variegata, and interspersed amongst them are plants of golden Privet, silvery Fuchsias, and that effective thing, Chlorophytum elatum, which is here largely employed. In one or two beds, fibrous-rooted Begonias, in the form in one case of semperflorens rubra, planted on a base of Leucophyta, intermixed with silvery Fuchsias, golden Privet, and green Eulalia, and edged with Sunray Fuchsia and Echeveria glauca, make very pretty combinations. In another case, on a base of the close-growing Dwarf Sweet Alyssum, were planted Begonia semperflorens rosea, mixed with golden and crimson Celosias, variegated Fuchsias, silvery grasses,

A very pleasing foliage bed was one of Cineraria maritima, mixed with Iresine Lindeni on Crystal Palace Gem Pelargonium, edged with Coleus Verschaffelti. There are huge beds of ordinary foliaged subtropical plants; others of Cannas, mixed, above which rise in abundant flower the new Tobacco, Nicotiana sylvestris. The old Begonia Worthiana is still seen in beds, but it makes a poor figure when seen against B. La Fayette. Just one bed is devoted to carpet-work, but it seems now very much out of place, and probably is the last of its race at Hampton Court. Seedling Verbenas have been beautiful, but they are now past their best. They, in common with Petunias, blue Lobelias, zonal Pelargoniums, and some other plants, that made a bright show in August, have grown too freely under the influence of the rains. The best bedding plants undoubtedly are those which, in spite of adverse weather, retain their characters, and bloom the longest. The old Bluebell and W. Niel Violas make capital masses. Montbretias are used

in the ovary which bore the seed, or locally in the frond which carried the spore. With Ferns, however, which have afforded us abundant material associated in many cases with reliable records, we have numerous instances of sports which obviously result from spore modification on types differing little from the normal, or at any rate far less than do the progeny which they habitually yield from their spores. Naturally these Ferns differed sufficiently to be collected, or we should have no record; no one could expect to be repaid by collecting purely normal types for experiments, the numerical proportion of "sports" being infinitesimal. But when we see comparatively slight variations yielding extremely marked ones, we may be justified in assuming that here and there plants apparently quite normal may do the same thing; and indeed the general absence of linking forms forces us to the conclusion that this must happen in the majority of cases.

To cite several instances illustrating my subject: Athyrium filix-femina var. setigerum is a hardy Fern of normal outline, found in 1878 in Lancashire. It is characterised by translucent, bristly points pervading its divisions, but is without a trace of creting or tasselling; its spores, however, invariably yield a large percentage of cristate and even pericristate forms, i.e., with even the minor sub-dorsum crested, and always in conjunction with the bristly points which serve admirably to determine the parentage. Sown with that remarkable pericristate Fern, A. f.-f. Victoria, we have an exact copy of Victoria in habit and make, plus this bristly character. In setigerum, therefore, it is clear that the faculty of creting is latent in the spores borne by non-crested fronds, and it is noteworthy that in this case, as in the case of the crested section of the same species (A. f.-f. plumosum superbum) raised from a non-crested plumosum, the excurrent character of the venation leading in one case to formation of bristles, and in the other to plumation, seems correlated strongly with a tendency to form crests. In another species, Scolopendrium vulgare, we have also an instance where we can fix the origin of wide variation as lying latent in a nearly normal plant. S. v. undulato-rigidum, a stiff-growing merely undulate form, finding its way into Messrs. Stansfield's hands, was found to yield constantly from its spores a percentage of thin-fronded, frilled, and fimbriate Hartstongues of great beauty, ultra-plumose forms; indeed, though partially fertile, these two in time yielded crested and heavily-crested types, though usually at the expense of the frills. The very numerous fronds of the barren frilled Hartstongues (nineteen in one list are credited to Col. A. M. Jones), point indisputably to some parallel latency in normal or nearly normal Hartstongues, these true crispums being absolutely barren. A third case may be cited in the Shield Ferns (Polystichum angulare). A decomposite fertile form was found in Dorset, and when its spores were sown by Col. Jones and Dr. Fox, the resulting plants were so extraordinarily and densely plumose that neither of them could credit the parentage, until a second sowing was made, and like results confirmed the fact. Here, as in the previous cases, the sporting capacity must be latent in the parent Fern, and be already implanted in the spore before it is scattered. Nearly every raiser of British Ferns can cite mysterious cases pointing in the same direction.

A tiny dwarf form of Blechnum Spicant (crispissimum, Hartley), resulted in quantity in a sowing of B. S. strictum, a somewhat narrowed but otherwise normal Blechnum. The writer, sowing from the dwarf form, found the prothalli to be globose fleshy masses instead of thin scales, a sort of congestion of the prothallus itself. The numerous finds of the quite barren Welsh Polypode (P. vulgare cambricum) must individually originate from spores of some fertile form of distinct character approaching the normal. The only fertile variety at all like it in form, P. v. pulcherrimum, was found in the Lake district, is not plumose at all though much cut, and



FIG. 70.—A STRIPED FLOWER OF DENDROBIUM PHALAENOPSIS SCHROEDERIANA.

Shown at the Meeting of the Royal Horticultural Society, Sept. 11, 1900. (See p. 240.)

Chlorophytum, and topped with Humeas. This again was a pretty combination. Amongst diversely planted mixed beds were those with rich dark Heliotropes, tall bushes; Streptosolen Jamesoni, white and red Swainsonias, Nicotiana sylvestris, and looming over all, tall plants of Plumbago capensis. This made a charming as well as richly perfumed mixture. Very taking, too, was a big bed of Bouvardias, scarlet, and white (Humboldti), topped with Lilium auratum; so also was a combination of crimson Celosias, 24 inches in height, finely tufted, mixed with strong clumps of Lilium lancifolium; and a few dark-leaved Acalyphas. The old Gazania splendens, so wonderfully effective in the sunlight, made elsewhere a dense carpet of yellow flowers, on which, thinly placed, were Begonia semperflorens rosea, creamy variegated Abutilons, edged with blue Lobelia and white Alyssum. An odd bedding-plant is Fuchsia Erecta var. Novelty, the plant 30 inches in height, blooming profusely, the flowers nearly erect, having whitish sepals, and pink corollas—still it is not pleasing. Much more so were half-standards of ordinary red, white, and pink Fuchsias, blooming profusely, on a base of single-flowered Petunias, but now out of character,

effectively in quantity; so, too, are Gladioli, and many others; indeed, a striking feature of the gardens is found in the great variety of the flowering and foliage plants. One large bed is filled entirely with hardy ornamental foliage, such as that of Prunus Pissardi, white and yellow Cornus, Golden Privet, Ailanthus glandulosa, and similar things, very happily blended with silver-leaved Maples. Hampton Court Gardens simply needs a band of music and a tea-châlet, as at Kew, to render them perfect. A. D.

THE FERNERY.

LATENT VARIABILITY.

IN studying the question of "sports" which occur as isolated plants of abnormal types, we are always baffled in our quest as regards the actual beginning, or the point of departure. It is impossible for us to determine whether the seed or the spore was inherently normal, and that the type modification arose by subsequent influence upon the germ of the seed, or in the reproductive process following the spore development; or whether the initial step was taken in the parent plants, either

when sown yields the fertile type truly. In the case of the Polypodys, however, it is noteworthy that bipinnate or sub-bipinnate forms are not uncommon in Wales in the localities where *P. v. cambricum* has been found, and it is only reasonable to assume, in view of parallel cases cited, that now and again these may yield spores which go a considerable stride further in the foliose direction, and thus produce the plumose barren type. The whole question of variation is so veiled in mystery, that any indications are welcome. When we actually see the abnormal plants, one, it may be, among millions of normals, the time is long past for perceiving its absolute genesis. The abnormality may have originated in a single spore on a neighbouring Fern otherwise normal, or, as in the instances described, a slightly abnormal Fern may be latently affected to a greater extent, and produce a proportion of spores in which its particular incipient character is accentuated, or even transformed.

But the spore itself might be absolutely normal, and the "sport" result from some subtle modification of one or more antherozoids or ova among the many subsequently formed on the prothallus, or in the amalgamation of these in the reproductive process. Or, leaving the spore altogether out of the question, the variety may originate as a bud-spore, the mother cell of a bulbil, or offsets producing an original style of vegetative structure, in which case it may be possible to determine its origin subsequently, since as in such a case which occurred in the writer's fernery, the two forms are found, like the Siamese twins, to be actually joined together. In the case in question, a plain frilled Hartstongue produced at its side a complete crown of heavily-tasselled fronds, which crown could only be parted by actual severance with a knife through the caudex.

It is the habit of Fern-raisers to sow from the best and most marked fronds, but so far there is scarcely any evidence proving that the results are enhanced by such selection; and some of the more experienced growers consider that the variation is "in the blood" of the entire plant, and equally transmissible by spores from any parts of it. On the other hand, I recollect that many years ago, the raiser of *Gymnogramma Lauchiana grandiceps* (Dixon, at Hackney) assured me that he raised the whole original batch of plants, all alike, from spores on a merely fan-shaped pinna which he observed on an otherwise normal plant. Observation and record of cases like this would certainly help us greatly in our quest for further knowledge of this most important and interesting branch of plant biology, regarding which we are at present almost entirely in the dark. *Chas. T. Druery, F.L.S., V.M.H.*

THE HERBACEOUS BORDER.

DOUBLE DAISY SNOWDRIFT.

SOME correspondence in the *Gardeners' Chronicle* last autumn on the subject of double Daisies led to Mr. Cuthbertson, of Rothesay, to send to me, for trial, an unnamed seedling, double, white-flowered Daisy, which he considered to be of much merit. It was in flower at the time, but one could not express any definite opinion upon it at that season, especially as it is usually necessary to give some plants an extended trial before forming an opinion about them. Happening to meet the sender in Edinburgh some months ago, I told him that it was an acquisition; and I then learned that it had been named Snowdrift, a not inappropriate name for such a flower. It has been grown here alongside of *The Bride* and other fine white Daisies; and now that it has been given a fair and severe trial, I can safely say that it is better than they. Snowdrift is purer and more floriferous than *The Bride*, does not show its centre, and lasts longer in flower. Small clumps are rarely without a flower in a summer such as that of this year; and now, in mid-September, they are affording a fair quantity of bloom. The double Daisies have been neglected

of late years, but the introduction of such forms as Snowdrift will help to make them more popular as bedding plants, &c. As a market flower it should have a future before it.

LEUCOCJUM AUTUMNALE.

A plant which is seldom seen at autumn flower-shows is the pretty autumn Snowflake, *Leucocjum autumnale*. Messrs. Cunningham & Fraser showed two or three pots of it at the last show of the Royal Caledonian Horticultural Society, and the plants appeared to attract some notice from those not altogether engrossed in gayer flowers. It would seem as if the plant would be appreciated much more if a large number of bulbs were planted in a pan, and if this could be shown when at its best. My attention was first drawn to the plant by an interesting article on the *Leucocjums*, written by the late Mr. Brockbank, of Didsbury, which appeared in the *Gardeners' Chronicle*, of March 15, 1884, p. 341. The plant is perfectly hardy, and it seeds freely, almost the only danger in its cultivation lying in the danger (in some hands) of its being pulled up for grass, when its leaves appear at a different season to that of the flowers. *S. Arnott, Carsethorn-by-Dumfries, N.B.*

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Vines in pots.—The Vines that have been grown for producing early fruit should be now thoroughly mature, and in a fit state for being pruned, although a few leaves and leaf-stalks may still remain. These remnants of the foliage should be carefully removed, leaving only the strongest bud, and the canes shortened to suit the position they will occupy in the forcing-house. In order to guard against bleeding, the wounds made by the knife should be dressed twice with styptic, and the canes bent to a semi-circle, or the upper buds will receive too much sap, and the lower ones too little. The canes should be washed with water and soft-soap, and afterwards coated with a thick wash of flowers-of-sulphur and nicotine. These operations being carried out, the Vines should be placed in a cool, airy structure for about one month before beginning to force them. Just enough water should be afforded as will keep the soil damp. During this interval of rest the house should be cleansed and repaired. The most reliable varieties for early forcing are Black Hamburgh and Foster's Seedling.

The Late Muscat Vines.—Muscat of Alexandria Grapes, in order to have them plump and good till January, should be quite ripe at the present date, and if the foliage is still healthy, no difficulty will be experienced in doing this, the roots being still in an active state. Light and warmth are the principal factors in bringing about the desired results. All shading material that may have been employed, must be removed, and leaves which shade the bunches too much should be tied aside. The temperature of the vinery from sunheat may run up to 80° to 85°, and this degree of warmth should be maintained as long as possible during the day, gradually reducing it to 65° to 70° at night. Not much moisture will be required by the borders after this date, and, if any be needed, it should be applied early on bright mornings. In changeable weather, sufficient warmth must be maintained in the heating apparatus to afford dryness and buoyancy in the air, with a slight amount of ventilation at the front and back of the vinery. A month of this kind of treatment will render the fruit firm and sugary, and in the best condition for keeping.

Late Vines.—Where the principal roots are in outside borders, means should be taken to protect the border against rain. If the slope is good, asphalted felt is a handy material for this purpose, but it should be so fixed that air can pass freely between it and the surface of the border. The borders which are inside the vineries must be kept uniformly moist, as the artificial heat used to ripen the Grapes and the dryness caused from sun-heat will soon extract much moisture out of the upper part. Late Vines of Black Alicante and Lady Downes Seedling, now ripe, should have the temperature

reduced to 50° at night and 55° by day. Vineries containing Gros Colmar, Gros Guillaume, or Mrs. Pince, will still require to be kept 60° at night and 70° by day in order to ensure perfect ripeness in the fruits. Ventilation should be afforded day and night, and sudden alternations of temperature guarded against, or splitting of the fruit may occur.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Selection of Fruit-trees for Planting.—Having recently advised intending planters to visit a fruit-tree nursery, I now give a list of well-proved varieties of the different kinds of hardy fruits, as a guide to those who cannot make it convenient to visit a nursery, or who require hints upon what varieties are best to order:—

Apricots are usually planted against walls facing due south, or any point between that and due west, but as a general rule, the further north the locality, the greater need is there for a warm aspect. Moor Park, although liable to lose its branches more than other varieties, is still the finest for general purposes. Other good ones are Kaisha, Henskirck, New Large Early, and Shipley or Blenheim, and Musch-Musch. The fruits of the latter make a particularly rich preserve.

Peaches and Nectarines require exactly the same positions as Apricots, and the varieties enumerated below should be planted in the order given, those which ripen earliest on the warmest sites, and later ones on a due western aspect. Early Alexander, Hale's Early, Rivers' Early York, Amsden June, Alexandre Noblesse, Royal George, Crimson Galande, Magdala, Belle Doué, Raymacker, Diamond, Violette Hative, Princess of Wales, Bellegarde, Prince of Wales, and in the warmest counties Walburton Admirable are fine varieties. Of Nectarines, Early Rivers, Lord Napier, Stanwick Elrige, Rivers' Orange, Pineapple, Humboldt, Spenser, Victoria, and Newton may be chosen.

Plums (Desert).—Of these plant July Greengage, Denniston's Superb, Bryanston, *Comte d'Atthems, *Coe's Violet, *Reine Claude du Bayay, *Bonne Bouche, *Anna Speth, and Late Transparent. Of Plums, *Jefferson, Kirkes, *Angelina Burdett, Ickworth Imperatrice, and *Golden Drop. All the foregoing are worthy the protection of a wall, and few of the Gages succeed perfectly without it. Plums (culinary), *Rivers' Prolific, *Czar, Orleans, Prince of Wales, *Pond's Seedling, Black Imperial, Red and Yellow Magnum Bonum, Sultan, *Monarch, Belle de Louvain, Diamond, *Cox's Emperor, Belle de Septembre, Late Orleans, and *Coe's Late Red. Plums will succeed on an east wall, and for early supplies plant Early Prolific, Czar, Early Orleans, and July Greengage, on a south aspect. All those varieties having an asterisk against them succeed well grown as cordons. Of Damsons, the Shropshire and Herefordshire Prune are the finest in point of size, and are also good croppers. Farleigh, or Crittenden, is an immense cropper, but the fruits are small.

Cherries.—Choose an eastern aspect for the main crop varieties, and plant Rivers' Early Black, Early Purple Gem, Werder's Black, May Duke, Early Purple Gean, and Guigne d'Annonay on a south wall, for affording fruit in advance of the main crop. In addition to these varieties, there are Belle d'Orleans, Black Eagle, Black and White Heart, Downton, Governor Wood, Black Bigarreau, Bigarreau Jaboulay, Bigarreau Napoleon, Elton, Black Tartarian, St. Margaret's, Bigarreau d'Hedelfingen, and Guigne de Winckler, Late Duke, and the new introduction, Noble. The Morello, Florence, and Kentish Red varieties succeed well on a north wall. The first and last of these three succeed and crop abundantly grown as bushes.

Pears.—These do well on a west wall, but only the best should be accorded this protection. A very excellent method of growing choice Pears is as cordons on the Quince, for which the following varieties are suitable: Beurré Giffard, Jersey Gratioli, Duchesse d'Orleans, Brockworth Park, Clapp's Favourite, Magnate, Le Lectier, Directeur Hardy, Beurré d'Anjou, Doyenné du Comice, Beurré Hardy, Beurré Superfin, Marie Louise, Emile d'Heyst, Winter Nelis, Knight's Monarch, Glou Morceau, Beurré de Aremberg, Olivier de Serres, and Bergamotte d'Esperen. Varieties suitable for wall-culture are Jargonelle, Williams' Bon Chrétien, Souvenir du Congrès, Beurré d'Amanlis, Summer Beurré de Aremberg, Pitmaston Duchess, Duron-

deau, Maréchal de la Cour, Louise Bonné, Princess Marguerite, Marillat, Beurré A. Lucas, Josephine de Malines, Beurré Baltet Père, and Beurré Diel. As bushes and pyramids Colmar d'Été, Souvenir du Congrès, Marie Louise, Thomson's, Althorpe Crasane, Beurré d'Amanlis, Forelle, Danas Hovey, Doyenné du Comice, Maréchal de la Cour, Fondante d'Automne, Pitmaston Duchess, Louise Bonné, Beurré Hardy, Alexandre Lembre, &c. The best stewing Pears are Catillac and Verulam. A list of Apples, &c., will be given in next week's Calendar.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

General remarks.—Remove Achimenes from the conservatory as the plants pass out of flower, and place them in pits where they will be fully exposed to sunshine. Less water should now be afforded them, the amount being decreased gradually until the foliage has died away, when the pots may be placed on their sides under stages in a house where the temperature will not fall below 50°. Caladiums and Amaryllis may be stored for the winter in the same temperature, and the bulbs keep best if allowed to remain in the pots until after Christmas. Tuberous-rooted Begonias, after being similarly dried off, when they are quite dormant may be shaken out of the soil, and the tubers packed in boxes containing Cocoa-nut fibre dust, and may be wintered in any dry structure in which they will be secure from frost. Proceed with the housing of plants, and allow as much space as possible to Chrysanthemums as to other plants. If these be crowded together, they will suffer from want of light, and mildew will spoil the foliage. Growth having now ceased, the roots are less active, and care should be taken that an excessive amount of manure is not afforded the plants, nor more water at the root than is needed. Keep the ventilators fully open day and night, and during the next week or two syringe the ground underneath the plants in the afternoon if in fine weather. This will help to counteract the sudden change from the moist night atmosphere out-of-doors to the much drier house atmosphere.

Violets in borders, if they are intended for cultivation in frames, should be afforded a thorough soaking of water a day or two before they are lifted. Those plants that are to remain outside may also be afforded water, for the ground is still very dry.

Montbretias in pots, so useful at this time of the year, will require manure-water while in flower.

Tuberoses intended for winter flowering are better left outside until frosts occur; put a neat stake to the flower-stem, and rub off all the offsets as they appear.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Discontinuance of Shading.—The bright weather of the present month has necessitated the use of shading much later in the season than is usual. Now, however, all dense shading of a permanent character should be removed. The slanting rays of the sun will do little harm, even to tender-leaved plants, and these may be protected when necessary by placing sheets of paper over them when it is inadvisable to shade the whole of the house or division. Blinds made of canvas or similar material should be quite dry when stored away, and it will be well to make a note of any that will need to be renewed for use next season. The lath-roller blinds are best left in position for use during severe weather, when they will be very useful as a means of partially protecting the house from frost, and cold winds at night.

Cattleya labiata will soon unfold its lovely blooms, and until they have done this, should be kept moderately moist at the roots. Subsequently a gradual decrease in the water supply may be made, until they are afforded only an occasional application, in order to keep the pseudo-bulbs firm. When the flowers have passed, cut the sheaths cleanly off at their junction with the pseudo-bulb. Plants may still be repotted if new roots emerge from the base of the last made pseudo-bulb, and in other respects they should be treated as above described.

Cattleya Warneri, &c., if not kept cool and dry at this season, is apt to commence growing too early. Plants showing this tendency should not be placed in heat to encourage development, or failure will result. Continue to afford them water, but only when

there are indications of shrivelling. *C. Gaskelliana* requires similar treatment. *C. Warszewiczii* often commences to grow again after the first pseudo-bulb is completed. In such cases the growing bud may be removed, or the plant placed under conditions that will hasten its development. The same remarks apply to *C. aurea*, and *C. x Hardyana*. Hybrids possessing the characteristics of diverse parents make growth at peculiar seasons, owing probably to the fertilisation of the seed parent at an unseasonable period. One cannot experiment with these, owing to their value and rarity, but often it would be more preferable to remove the unseasonable developing bud, than to let it remain and form an immature pseudo-bulb. Every advantage of position should be accorded to plants in the act of producing new growths. Afford water in small quantities and often, rather than heavy applications, that the base may not be sodden should dull weather occur.

Odontoglossum grande now flowering, will commence a long period of rest soon after the blooms have been removed. At that time the plants should be placed in a warm, light position in an intermediate-house, and afforded only sufficient water as will keep the pseudo-bulbs firm, when they have become fully developed.

Trichopilia suavis and other species that have finished growing should be treated similarly to *Odontoglossum grande*. But *T. fragrans* is an exception, it being a cool-growing species. It is now producing its flower-spikes, and needs to be afforded water with great care.

Pests.—Slugs should be sought for at night, and cockroaches kept under by frequently placing phosphor-paste on bits of crock amongst the plants at night; but always removing them in the morning for fear of accidents, as it is a dangerous poison. Scoop out part of the interior from pieces of Potato, and place them hollow-side downwards upon plants where wood-lice are common; then by frequently examining the Potatoes, many will be captured.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westontirt, Tetbury, Gloucestershire.

Mushroom-beds.—In order to afford the cook Mushrooms regularly throughout the winter, the place in which they are grown should be a suitable one. The Mushroom-house is sometimes built at the rear of glass-houses and near the heating apparatus, and perhaps close by the stove-hole. This is an unsuitable position, sulphurous fumes penetrating the house; and again, proximity to the boiler makes it impossible for the gardener to keep an equable temperature, or the required degree of humidity in the house. To overcome this there is much slopping of water on the floors and walls, which causes the Mushrooms to turn black, and other evils. A Mushroom-house or cellar must be fitted with the means of ventilation, or the Mushrooms will damp off. The best kind of ventilation is by means of fall doors, or sashes in the roof. If a bed was spawned and covered with soil about the middle of last month, it may now be advisable to afford a slight degree of heat to the house, in order to keep the temperature at about 58°. A succession bed may now be made, if stable manure in good condition is available. Where an open shed of good size does not exist, the manure as it is taken from the dung-pit may be stacked alongside of a wall, and protected from the rain. Do not let the bed touch the pipes, or even approach them nearly, and beat the materials of which it consists firmly. For covering the bed rich loam sifted finely is the best. Whether a bed requires moistening must be left to the judgment of the gardener, but unless it is very dry on the surface no water should be applied till Mushrooms show on the top. The temperature at which to spawn will hold good for all seasons, namely, from 80° to 85°. Beds made in the open and spawned not later than the first week in October will bring very fair returns, and may be had by the middle of the month of December; but if they are left for two or three weeks later the produce may be quite three months later in coming. These out-of-door beds require to be covered with long litter, and over this some sort of waterproof covering or Russian mats, increasing the thickness of litter as the cold increases.

Radishes.—Seeds for furnishing the winter supply of roots may yet be sown. Sometimes sowings made in the open in the middle of September, and if afforded some slight protection against frost, they will last till the new year. However, the sowing this year should be made forthwith in pits or frames.

During the winter months the temperature of the pits, &c., should not be much less than 50°, and in making fresh sowings later in the year 60° will not be too high. The beds in the open should be hooped over, and mats placed over the plants when frosty weather sets in.

Parsley.—With glass protection, the July sowings will afford plenty of leaves for use throughout the winter; nevertheless, a few dozen roots should be lifted and put into a cold frame. For the next two months the frames should be left open by day in fine weather. When transplanting, it will not be amiss to add a liberal amount of charred garden-refuse or soot to the soil, and to remove the older leaves from the plants.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Ichester, Abbotsbury Castle, Dorsetshire.

Hints on Operations that are Urgent.—The drought is taxing the resources of most gardens very heavily, and especially where much planting was carried out in the spring. Nothing short of heavy mulches, and the continued use of the hose or watering-pot, will keep the plants alive. If attention be paid to keeping the foliage of deciduous shrubs and evergreens fresh, and thus prevent flagging, the roots will continue to act. As a means of lessening the heavy labour caused by having to afford much water to shrubs and trees in the summer and autumn, I would strongly advise gardeners to plant early in the autumn. Any piece of land which has been selected for planting should be staked out forthwith, and when in a fit state for planting, the work should be undertaken within the next two months. In the meantime garden and woodland refuse and rubbish should be charred and used on the land when trenching it, and should the staple be infertile, a large quantity of manure, road-scrappings, ditch clearings, &c., should be dug in. Plants set out on land treated in this manner and at this season become established much sooner than when planted in the spring, and cost less in labour the following summer. This is the season to grub up worn-out or unhealthy bushes, taking special care to dig out all the roots. Gaps in the shrubberies should be made good by planting *Pyrus Malus* in variety, *Crataegus*, &c., after first dressing the stations with pasture-loam and manure.

Herbaceous Borders should now be cleared of dead flower-stems, unnecessary sticks and stakes, weeds, dead leaves, and flowers, and generally make the borders tidy and presentable. Where bulbs and corms lie buried, the spots, lines, &c., should be indicated by labels or small stakes. If a new border is to be made, the land should be enriched with farmyard manure, or leaf-mould and charred refuse, and be deeply dug or trenched. In retentive soils that are not well drained, a drain may be made of rough stones, or brickbats, flints, &c., placed in a V-shaped trench made 9 inches deep, leading to a dry well or drain, situate at the lowest point. The materials in the drain should be covered with sods or heather; such a drain will, by carrying off the too abundant moisture, impart warmth to the land. A herbaceous border which is to be planted with tall and dwarf plants should be 10 or 12 feet wide. There are some gardens that could be made very attractive by making a border for the growth of herbaceous perennials below the terrace wall. The old-fashioned haw-haw would also in some places make an admirable site for such a border. I purpose giving a selection of herbaceous plants in another Calendar. New shrubberies would be rendered more ornamental than is usually the case by planting in clumps and lines, bulbs and corms of Crocuses, Snowdrops, Chionodoxas, Scillas, early and late single and double Tulips, Hyacinths, Erythroniums, hardy species of *Glaucolus*, *Lilium album*, *L. croceum*, &c.

Lily of the Valley.—New beds should be formed every third or fourth year, in order to have a good supply of fine flower-spikes. It is customary to order the roots at this season, and hold them in readiness for planting. The plant thrives in a half shaded place. If the land be heavy, the soil on the site of the bed should be thrown out to a depth of 2 feet, and hard drainage materials put into the hole 6 inches in depth, and over this peat-sods or some turfy loam should be placed. The staple should then be enriched with leaf-mould and dry cow-dung. When levelled and raked smooth on the surface, plant the crowns about 4 inches apart, and 2 inches beneath the soil. They will make early progress if a mulch of short dung be put over them

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR OCTOBER.

TUESDAY,	OCT. 9	Royal Horticultural Society's Committees. National Chrysanthemum Society early Exhibition (3 days). Paris Exhibition (temporary show).
TUESDAY,	OCT. 23	Royal Horticultural Society's Committees. Paris Exhibition (temporary show).
TUESDAY,	OCT. 30	Croydon Chrysanthemum Show (2 days). Penarth (South Wales) Chrysanthemum Show. Torquay and District Gardeners' Association Chrysanthemum Show. Wolverhampton Chrysanthemum Show (2 days).
WEDNESDAY,	OCT. 31	

SALES FOR THE ENSUING WEEK.

EVERY DAY.—Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY, OCT. 2.—Established Orchids, at The Nurseries, Park Lane, Tottenham, by order of the Executor of the late Mr. J. E. Pennett, by Protheroe & Morris.

WEDNESDAY, OCT. 3.—Important unreserved Sale of Nursery Stock, at the Tunbridge Wells Nursery, Tunbridge Wells, by order of Messrs. Thos. Cripps & Son, by Protheroe & Morris (two days). Orchids, Plants, and Live Stock, at Fair Oak Lodge, Eastleigh, Hants, by order of the Executors of the late W. A. Gillett, Esq., by Protheroe & Morris.

FRIDAY, OCT. 5.—Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—54°2'.

ACTUAL TEMPERATURES:—

LONDON.—September 26 (6 P.M.): Max. 66°; Min. 49°.

Weather fine early in the day, rain in the evening; generally unsettled.

PROVINCES.—September 26 (6 P.M.): Max. 69°, Frome; Min., 44°, Shetland Isles.

Some Practical Facts regarding Soils.

PLANTS are composed of two classes of chemical substances, known as organic or volatile, which are destroyed by burning; and inorganic, or fixed elements, which remain in the ash after burning. The importance of the inorganic or fixed elements to plant-life rests in the fact that, no matter what sort of a soil is under cultivation, a healthy plant carries away about the same amount of these constituents which it obtains from the soil for the building up of its structure. At the same time, while the same species of plant when matured may yield to analysis very similar quantities of these elements, different species will show different results as to kind and quantity; and the more remote the natural affinity of the species to each other, the wider, as a rule, will be these differences.

Perfect plants cannot be produced, much less can fruits, on soils where one or more important constituent is absent. The most valuable materials are phosphoric acid, potash, lime, and nitrogen. Accordingly, where soils have been exhausted by the growth and carrying away of crops below the point of remunerative cultivation, they may be restored to fertility by making a judicious return of the ash or mineral constituents along with the element nitrogen. This latter, the nitrogen, belongs to the organic class of plant-foods.

While it is true that some alluvial soils possess vast stores of plant-food, both of nitrogenous and of mineral substances, as to be regarded practically inexhaustible, yet by constant cropping, without a suitable return in manure, they will in time become unproductive.

The condition of a plant grown on an exhausted soil may, says Dr. PAGE, be likened to

that of a storm-tossed mariner in mid-ocean with his water-casks washed away and he dying of thirst, with "water, water everywhere, and not a drop to drink."

The plant with mineral elements everywhere in the soil, and organic elements everywhere in the atmosphere, and none available for use. Paradoxical as this may appear, it is nevertheless true, owing to the fact that the greater part of the soil-constituents are locked up in an inert condition, in which state, for the most part, they remain until united with a solvent supplied as manure. For example, in one of the experimental plots of the late Sir JOHN LAWES at Rothamsted, to which no manure whatever was applied for thirty-eight years, the soil at the end of that period was found, on analysis, to contain in the top nine inches as much as thirty-six thousand six hundred and four pounds of potash per acre, and two thousand five hundred and three pounds of phosphoric acid per acre. Of these very large amounts of plant-food in the soil, only ninety-one pounds of potash, and one hundred and thirty-nine pounds of phosphoric acid per acre was in a soluble condition and available to plants. The addition of three hundredweight of superphosphate per acre to this same soil, on an adjoining plot, increased the solubility of the plant-food to one hundred and sixty-five pounds of potash per acre, and to one thousand one hundred and seventy pounds of phosphoric acid per acre.

Having by this means brought the inert mineral constituents into a condition of solubility, the addition of nitrogen in the form of ammonia-salts as manure to this same land raised the produce from twenty-two to forty-three bushels of Barley-grain per acre, and the straw from eleven hundredweights to twenty-four hundredweights per acre.

These important facts teach us that as science has furnished the mariner with means and appliances to obtain fresh drinkable water for his relief from the briny sea-water, so science comes to the aid of the gardener and the cultivator of the soil, and furnishes him with means and appliances of relief attainable in the soil and in the atmosphere by which he is surrounded.

Thus, the chief office of manure is to furnish assimilable food for the immediate use of growing crops, and that these combine with and supplement the natural food-supply existing in the soil. When it is said that certain constituents in the soil are lacking, it does not always mean that the soil does not contain them, but that it does not supply to the growing plants as much as they need. It is not so much, therefore, because soils have been worn out of plant-food, but rather because the food is locked up in such combinations that the plant-roots cannot get at and use it, that an artificial supply of soluble food in manure becomes necessary.

It is believed, says Professor Roberts, that the beneficial effects of commercial fertilisers are due as much to the timely supply as to the amount of nourishment they contain. This timely supply enables the plants to enlarge their root system, whereby they are able to secure more nourishment from the soil over and above that furnished by the fertilisers, than they could have secured without such supply. If this be so, it is seen that the use of concentrated manures in small quantities may not only largely increase the yield of crops, but may also serve to deplete the soil of some of its elements of plant-food more rapidly than would the same kind of crop and treatment without their use.

CRATÆGUS CRUS-GALLI (Supplementary Illustration).—The genus *Cratægus* provides the planter with some of the choicest subjects for the decoration of the garden, pleasure-ground, and woodland. This ample store of good things, taking gardens in general in this country, has not been much dipped into as yet, and the species which is more commonly found in quantity is the Whitethorn, *C. oxyacantha*, and the pink form of it. The beautiful double-flowered forms in rose, red, crimson, and scarlet, of *C. oxyacantha* are relatively much less common; and yet finer trees for gardens, or forecourts of villas in towns, are not to be found. Near the sea-coast the colours of the flowers come out with intense brilliancy. Next to the flowers in decorative importance are the fruits, which are produced in abundance in most years in colours of yellow, crimson, and red. We may mention as being of great decorative value, *C. pyracantha*, with white flowers, glistening small foliage; and the brighter red-berried variety, *C. p. Lelandi*; the North-American *C. coccinea*, with large corymbs of white flowers, having red anthers, large ovate, cordate, glabrous leaves, and large, bright red fruits; *C. pyrifolia*, and *C. prunifolia*, likewise North American species; the first named having large, oblong, toothed leaves; white flowers, produced in corymbs, and pear-shaped fruits. The second has small scarlet-coloured fruits, and much resembles the subject of our illustration, *C. crus-galli*, Cockspur Thorn, excepting that the fruits are smaller. The Cockspur Thorn forms a very characteristic half tree, beset with strong, curved spines, and has horizontally-poised branches and twigs, having bark of a yellow-brown colour. The blossoms come in simple clusters, which are quite destitute of hairs. The fruit is globular, and of a brick-red colour. On account of its long spines and vigorous growth, *C. c.-g.* makes a capital hedge plant. There are several varieties of this species in cultivation, of which mention may be made of *lancifolia*, with very small leaves; *splendens* and *laurifolia*, with broad ones; and *pyracanthifolia*, with long, lancet-like leaves. The tree figured is growing in the front garden of Mr. J. P. GABRIEL, 32, Palace Road, Streatham, and shows admirably the habit of the species. The tree was photographed by Mr. FRED. COOPE, of Brixton Hill, S.W.

THE NATIONAL CHRYSANTHEMUM SOCIETY has already fixed the dates for its exhibitions in 1901. The early autumn exhibition will be held on October 8, 9, and 10; and the great autumn competition on November 5, 6, and 7; and the early winter exhibition on December 3, 4, and 5. In each case the days of the week will be Tuesday, Wednesday, and Thursday.

PROFESSOR W. VON AHLES, who was for many years the President of the Horticultural Society of Württemberg, and conductor of the Technical High School in Stuttgart, died there at the age of seventy-one years.

THE LAC INDUSTRY OF ASSAM.—A recent report of the Assistant-Director of Agriculture in Assam deals in detail with the lac industry there. Lac occurs in its natural state in various parts of the forests of Assam, as well as of Burma, but chiefly in parts of the Khasi and Garo hills, and the export in recent years has averaged 16,000 maunds, or something over 500 tons, but in some of the forests, owing to the ravages of the Kola-azar epidemic and depopulation, the production is declining. The production in Manipur is not sufficient for the local needs, and quantities of lac are sent there from the Kubo Valley of Assam. In Assam the lac is usually collected twice a year, first in May and June, and then in October and November. The first is mainly used for seed purposes, while the second forms the export. A few days after the collection, pieces of stick lac containing living insects are tied on to the branches of the trees on which the next crop is to be grown. The usual plan is to place the lac in small bamboo baskets and tie these on the twigs of the trees. The

insects soon crawl out, and spread over the young branches, on which they promptly begin to feed, and secrete the resin. This is allowed to go on for about six months, when the lac is collected; but if the secretion has been defective or insufficient the insects remain undisturbed for another six months.

CARDIFF GARDENERS' ASSOCIATION.—The Opening of Session 1900 will take place on Tuesday, October 2, at 7.30 P.M. sharp, in the St. John's Hall, St. John's Square, when the Deputy-Mayor (Mr. Councillor J. W. COURTIS) has kindly consented to preside. A lecture will be delivered by Mr. Councillor GERHOLD, entitled "British Residences and Gardens," illustrated with lime-light views. All members should endeavour to be present on this occasion, and bring with them any friends interested in horticulture.

THE SYLLABUS FOR THE PRESENT YEAR AND 1901 IS AS FOLLOWS:—

- Oct. 2.—"British Residences and Gardens," illustrated with lime-light views. By Councillor J. M. GERHOLD.
- " 16.—"Sweet Peas." By Mr. J. C. HOUSE, Coombe Nurseries, Westbury-on-Trym.
- " 30.—"The Culture of Roses in Pots." By Mr. T. H. JARVIS.
- Nov. 13.—Through the kindness of JOHN BALLINGER, Esq., Chief Librarian, the members will visit the Central Free Library to view the valuable works (Ancient and Modern) on Horticulture.
- " 27.—"Useful Orchids and their Culture." By Mr. H. HARRIS, Head Gardener, Coedriglan Park, Glamorganshire.
- Dec. 11.—"Bee-Keeping." (Lecturer's name will be announced at an early date).
- Jan. 8.—"Chemical Manures on Fruit and Kitchen Garden Produce." By Mr. F. W. E. SHRIVELL, F.L.S., Thompson's Farm, Golden Green, Tonbridge.
- " 22.—"The Chrysanthemum in 1899 and 1900." By Mr. J. J. GRAHAM, Gardener, "Breynton," Penarth.
- Feb. 5.—"The Rock Garden." By Mr. W. W. PETTIGREW, Superintendent of Parks and Open Spaces, under the Cardiff Corporation.
- " 19.—"A Chat about Large Gardens and Parks that would be suitable to go for an Outing, and the best way of getting to them. By the Members (who will give their views upon the place of their own selection).
- Mar. 5.—"Peaches and Nectarines." By Mr. H. R. FARMER, Foreman, Cardiff Castle Gardens.
- " 19.—"Business." Election of officers. Selection of a suitable place for annual outing, &c.

PACKING OF PLUMS FOR TRANSIT BY RAILWAY.
—We received some short time since a boxful of Denniston's Superb Plums, which were simply but effectively packed in two layers, with several sheets of tissue paper separating the layers, and each fruit was wrapped in little oblong pieces of tissue paper folded around it so as to form a cube, the little extra thickness of each package at the ends forming a pad or buffer between the fruits. The Plums were placed in the boxes close together without there being any squeezing, and when examined they were found in perfect condition, although the parcel had been subject to the rough treatment of an ordinary post packet. We think that if our fruit growers would adopt some such method of packing for superior varieties of stone fruits, instead of sending them to market in sieves and bushel baskets, to be bruised and injured by jolting in waggons and railway vans, and picked them in a nearly ripe state, and not half-ripe, as is very generally the case now, it would be greatly to their advantage. The Californian shippers can send Coe's Golden Drop Plum to this country in perfect condition and afford to sell them at 4d. a lb. retail; whilst we, who also grow this delicious variety, seldom put them on the market in a ripe state, or pack them in enticing boxes or baskets.

BANANA CULTIVATION IN FIJI.—The exportation of fruits, and especially of Bananas, continues to rise, and according to the report of the German Consul, the value of the exports rose from £25,477 in 1898, to £30,606 in 1899. Nevertheless this crop is considerably less than could be obtained.

The plants are subject to a disease, the cause of which is not as yet ascertained. During the first year no injurious appearances are remarked, and the plants bear handsome bunches of fruit, but suddenly they become unhealthy and must be grubbed up. With the aim of overcoming the disease, new plantations are laid down, but under the disadvantage of getting always further from the seaports. Some of the planters are importing varieties of Bananas from other countries, in the hope of obtaining one or more which may resist the disease.

BARON AND BARONESS SCHRODER.—In commemoration of the golden wedding of Baron and Baroness SCHRODER, celebrated near Windsor, on Wednesday, the 19th inst., the Baron has received from the QUEEN the decoration of Commander of the Royal Victorian Order, accompanied by an autograph letter from Her Majesty. The GERMAN EMPEROR telegraphed his congratulations in warmest terms, and conferred upon Baron SCHRODER the Crown Order of the First Class; and the GERMAN EMPRESS presented to the Baron and Baroness a magnificently-bound German Bible, with autograph inscription.

MR. G. W. EDEN informs us that he is leaving Henham Hall, at which place he has held the post of head gardener to the Earl of STRADBROKE for a period of twenty years. He has the intention to establish a nursery mainly for the cultivation of Violets, in the locality in which he has resided so long.

PRICES OF CHRISTMAS FARE.—It seems rather early in the year to make note of this, but the Currant crop in Greece having proved nearly a wreck, such stock as was in hand has gone up in price with a bound—having got quite outside the purchasing power of the poorer classes, and people with an eye to Christmas fare ask, "And what of Raisins?" The imports of these for August were in excess of those for the same period last year—19,680 cwt., against 16,174 cwt. From Greek sources we learn further that the crop of dried Raisins, now limited nearly to Messina and Laconia, will this year be about 14,000 tons. The quality in general is mediocre, but the price has never been so high. Many purchases are made every day by merchants from Patras, who have sent representatives to Calamata. The Raisins are all despatched to Patras, from whence they are sent principally to England and America. It may be comforting to know that the crop of dried Figs will, it is said, be very abundant this year, and of the best quality. Of the Currant imports into this country for consumption, the Board of Trade returns for last month place the figures at some 19,400 cwt., against 44,673 for the same period in 1899.

THE ANNUAL FUNGUS FORAY OF THE YORKSHIRE NATURALIST UNION, extending from September 15 to 22, was devoted to an investigation of the extensive and beautiful Mulgrave Woods, situated near Whitby. Fungi were abundant, the weather magnificent, and workers enthusiastic. Just over 400 species were collected, including many rare and interesting forms, several of which are new to the Yorkshire mycological flora, and two or three not previously found in Britain. There was a good attendance of mycologists, including Mr. G. MASSEE, F.L.S., of the Royal Herbarium, Kew.

ANEMONE JAPONICA MONT ROSE.—The pretty variety of *Anemone japonica* which we figured in our last issue was, as M. LEMOINE ET FILS of Nancy kindly informs us, raised by cross-breeding at their nursery, and distributed by them in 1893. We regret to find that the exhibitor of the plant at the Drill Hall, on Tuesday, September 11, was stated in our note accompanying the illustration to have been Messrs. W. PAUL & SON, of Waltham Cross, instead of Messrs. PAUL & SON, of Cheshunt.

PUBLICATIONS RECEIVED.—*Bulletin of the Botanical Department, Jamaica*, New Series, vol. vii, part ix., September, 1900. This issue contains an article on "Orange Culture and Diseases," by Dr. J. Borg, M.A., read at the Malta Archaeological and Scientific Society. The article treats of the early history of the Orange, and traces the spread of its cultivation over the East, Azores, Portugal, Spain, and Northern Africa. Then follows matter dealing with its cultivation, with diseases, and insect enemies incidental to the plant, and how they may best be combated. The *Bulletin* may be purchased at the price of 3d. at the Government Printing Office, 79, Duke Street, Kingston, Jamaica.—*Seven Gardens and a Palace*, by "E. V. B.," published by A. & R. Milne, Booksellers and Stationers, Aberdeen, N.B.—*Studies in Fossil Botany*, by Dukinfield Henry Scott, M.A., Ph.D., F.L.S., F.G.S.: published by Adam & Charles Black, Soho Square, London.—*Flowering-plants, Grasses, Sedges, and Ferns of Great Britain*, by Anne Pratt and Edward Stepp, vols. i. to iv.: published by Frederick Warne & Co., London and New York.—*The Louse Plague and its Suppression*, by Eneas Munro, M.D., with illustrations: published by John Murray, Albemarle Street.—*Les Algues de la Flore de Buitenzorg*, by E. D. Wildeman: published by E. J. Brill, Leide.

THE WEATHER IN WEST HERTS.

A WEEK of warm days, but with variable temperatures at night. For example, during the night preceding the 20th, the exposed thermometer fell to the freezing point, whereas two nights afterwards, the same thermometer registered a minimum reading of 55°—a difference of 23°. The changes in the ground temperatures have also been considerable for the time of year. At the present time the readings at 1 foot and 2 feet deep are respectively 2° and 3° in excess of the average. The first rain worth mentioning since the end of last month fell on the 24th, and even then only about a tenth of an inch was deposited. The dryness of the ground for so late in September is very exceptional. Indeed, no rain-water at all has come through even the bare soil percolation gauge for over three weeks. The sun shone during the week on an average for four-and-three-quarter hours a day, which is not much in excess of the average daily duration for the time of year. *E. M., Berkhamsted, Sept. 25.*

FOREIGN CORRESPONDENCE.

A FAMOUS SCOTCH GARDENER.

ENGLISH gardeners should read with interest the following account of one of their number, who, in a foreign land, has lent much lustre to the "grand old name of gardener."

On Tuesday, September 11, at his home in Washington, U.S.A., there died at the mature age of seventy-eight years, one of those monumental persons, the like of whom we see at long intervals. William Saunders, who was in charge of the gardens and grounds of our national Department of Agriculture, has had an influence in the growth and development of our horticulture that it is hard to realise by a younger generation. He was the man who handled all the new introductions before they were finally distributed to the several parts of the country; and his intelligent distribution has been a valued aid in the operation of the department. Saunders was born in St. Andrews, Fife, Scotland, the son of a gardener, whose father was also similarly engaged. It has been said that "what's bred in the bone will come out," and so it proved in the present case. The Saunders' family went to India, and the young man, the subject of this note, was intended by his parents to be a minister, to which end he entered a college in Madras, but ran off one night, much to the maternal sorrow, and with the determination to become a gardener, he, in one way and another, managed to get back to England, and was in several of the gardens there. At Kew he made the acquaintance of T. Meehan, another now famous horticulturist of America, and the two were associated in this country later on. It is fifty-five years ago that Saunders landed in America. His direction made Fairmount and Hunting Parks in Philadelphia the beauty spots they are to-day. Clifton Park, Baltimore, the grounds of the founder of Johns Hopkins' Univer-

sity, were developed by him. It was in 1862 that the Department of Agriculture was organised, and Saunders was put in charge of the purely practical part of the work. It is indeed remarkable that his appointment has endured to the present time.

The most signal service rendered to our commercial horticulture by this man is unquestionably the introduction of the seedless or Navel Orange, which has brought millions of dollars to California. The discovery of the Navel Orange was made primarily by an American woman travelling in Brazil. She wrote to friends in this country concerning the superior quality of the Oranges in that South American country. Mr. Saunders had already devoted some attention to the improvement of Orange-culture in the United States, and had introduced a few new varieties. This letter being brought to his attention suggested the possibility of a new find, and in 1870 he secured a shipment of twelve young trees. This was the original stock from which have sprung all the far-famed Orange groves, producing what is commercially known as the "Riverside Navel (or seedless) Orange" of Southern California.

All of the twelve plants thrive, buds from these trees were grafted upon small Orange-plants then under cultivation, and the process of propagation began. As the supply increased, hundreds of the young plants were distributed through Florida and California. For some undiscovered reason, Florida proved unfavourable to the productiveness of the trees, and the fruits there also produce seed; but the development and success of their culture in California constitute a subject of unusual interest. The average annual shipment of Oranges from Riverside has now increased to 1,600,000 boxes.

On the occasion of my visits to Washington, Mr. Saunders has ever been most courteous, and he entertained a lively interest in the leaders of the craft in the old country. I remember him showing me the Figs he had received from the Royal Horticultural Society, and from which he anticipated much good to the Pacific slope fruit industries.

Personally condescending and modest, Saunders was one of the workers whose reward is in the good they do. He never made money, and lived only for his work. So retiring was he that outside of those who were associated with him, there were but very few who in any way appreciated his labours. Yet the world in general, and not only the United States, is the better for that he has lived. Yet his associates at Washington well knew of his powerful mind; his keen insight and perception have been the fountain of much of the effective work of the department by which it is the envy of the world to-day.

Speaking only very recently at Minneapolis, Mr. John Hyde, the Statistician of the Department of Agriculture, remarked that the department has not begun to exhaust the suggestions of value made by Mr. Saunders years before the department had undertaken to be very minute in its investigations. "Not a few of the investigations prosecuted by specialists in the service of the department in more recent years may be found suggested in their main outlines in reports made by Mr. Saunders to the Commissioner of Agriculture."

The career of this fine old man whom, alas! I have met too rarely, is an inspiration. *L. Barron.*

POLYGONUM BALDSCHUANICUM.

Your correspondent (p. 227) most probably did not see such highly decorative specimens of this noble plant as that figured in your columns some years ago (January 9, 1897, p. 17, fig. 4). Similar specimens may be obtained from young plants within a couple of years. The price given by your correspondent is far too high; strong young plants may now be had for 3s. to 4s. each, and even cheaper in quantities.

The plant is absolutely hardy here, and doubtless will prove to be so in Great Britain. An old specimen, established some years, is the admiration of all visitors to our gardens. *Ernst H. Krelage, Haarlem.*

HEATHER AS THATCH.

ALL over England the straw-thatched cottage is known, and usually considered a picturesque addition to the scattered village or remote farmstead. Not so well known, however, save in the north, and near the border, is the Heather-thatched building. It will be remembered that the straw-roof needs constant renewing, and many might substitute Heather should they so desire, which is infinitely more durable, and is, besides, cheap and

the fading Heather is cut well above the root, and each tight handful tied round the middle with tarred string. The heap of bundles increases until the necessary hundreds are collected, and they are then carted to the customer's village, and the stern work of roofing is begun, and in very short time completed. The Heather is cut above the thick stems, only the fine pliable stalks serving for thatching.

The frame-work of the roof will probably be ready for the thatcher, and laths or long sticks



FIG. 71.—HEATHER-THATCHED COTTAGE, RIDING FARM.

ornamental. Two sketches taken from one tiny village on Old Watling Street are subjoined as fair average specimens (figs. 71, 72).

The professional Heather-thatcher is unique in his way, and known for miles around. Should he have an intimation that his services are required, he walks over from his distant village on the moors, and with few words takes in the situation, and gazes abstractedly on the roofless building, roughly gauging the amount of Heather to cover it in close and strong. A few days elapse while the thatcher makes his preparations. Heather may be had for the cutting, and the keen knife is soon at work;

stretched horizontally from spar to spar about 6 inches apart. The thatcher begins at the bottom one, just above the side walls, and ties his bundles to the lowest stick, pressing each bundle close against the next, blossom end downwards, and stems upward and inward. The first row finished, the next is begun and tied to the second stick, the bundles overlapping the first row; so on until the apex of the roof is reached, when the stems are shorn off close and neat, and a row of close tufts pressed over them and fastened securely down.

Part of the roof of the cottage (fig. 71) is said to have been on for forty years, and I hear of one instance

of a roof lasting fifty years. Lichen and grass-seed occasionally take root, and help to keep off the extreme effect of sun and rain.

This cottage is interesting as being situated on the edge of Old Watling Street, and as being a "bondage house" to the Riding Farm.

There are few parts of England now, save Northumberland, where the bondage-house still remains—a remnant of old feudal times. The tenant or bondager is bound to work for the farmer whenever called on; however inconvenient,

many years experience of fig. 72, the garden-but—which has been in existence some twenty-five years, and the Heather has never been renewed.

On moving to a new residence in 1883 the writer found a charming Heather summer-house in the grounds, and purchased the same for one guinea from the former tenant of the property, such being considered by said tenant the full value of the erection. Since that date, seventeen years ago, it has served as children's play and toy-room, tool-house, and other useful purposes, and is still in use. Many

species, three of which I now enclose. This time they are on Ivy growing on a fence in a different part of the garden. They are very difficult to find during the day, but just before dusk they come out on to the leaves. I had never seen them actually eating the leaves, and so I placed some leaves and caterpillars under a bell-glass at night, and in the morning the leaves had all been bitten more or less, so probably they feed only at night. In a garden half a mile distant the Ivy has been spoiled for this season by them. It would also be interesting to know if the comb-like substance upon the Ivy is in any way connected with them. I have enclosed another caterpillar found to-day on a Crab-tree. *A. T., Birmingham.* [The Looper-grubs infesting Ivy, are the larvæ of the Scalloped hazel-moth (*Odontoptera bidentata*); they are nearly full fed, and will shortly "spin up" below the surface of the ground, beneath moss, &c., and there pupate; the moths escaping the following May. Numbers of the caterpillars may be taken by holding an inverted umbrella beneath the infested tree, and beating the branches or leaves over it; you may also destroy them by spraying with Paris Green at the rate of 2 to 3 oz. to the gallon of water, keeping the mixture well stirred. The "comb-like substance" is a batch of cocoons of a friendly Ichneumon Fly (*Microgaster* sp.), the larvæ of which are parasitic on various caterpillars, which, when full-fed, escape from the body of their host, arrange themselves in a group, and spin up their cocoons in the way you have found them. The blue-horned caterpillar is that of the Eyed Hawk Moth (*Smerinthus ocellatus*), common in many localities, but rarely known to be injurious to fruit-trees. Ed.]

CARNATION MRS. T. W. LAWSON.—Mr. R. Sydenham, on p. 231, rather harshly criticises my note in reply to his previous one respecting this variety. He says my remarks were "a very poor apology for a very poor flower, written from interested motives." Now, if he will trouble to re-read my remarks, he will find nothing about interested motives, or any form of an apology. I meant to infer that should the variety be disappointing, it would not be surprising, and as a cute man of business, Mr. S. should be well aware of the American manner of booming anything. I do not expect this variety to be anything startling, neither do I consider it the best of the Americans; but I again repeat that it is hardly fair to judge of it by a few poorly-grown blooms. Mr. Sydenham asserts that I have not seen a bloom of Mrs. T. W. Lawson. I had flowers in June, and many since, and one is before me as I now write. Mr. S. says that I seem to overlook the standard of excellence that all English owners try to work up to. Surely he must have read my remarks very loosely, or he would have noted that I distinctly stated that I preferred a smooth-edged petal. It is useless for Mr. S. to argue that the competition is as keen in the classes with the paper collars or cardboard supports, even if classes are to be found for them at the N.C.S. exhibition, as it is in the classes where they are not admitted. I still contend that a properly fringed or regularly dentated petalled flower (not a rough petal) may have a charm for some, and in the way of growing and showing Carnations, we have much to learn from the Americans. From the note on fringed Carnations by Mr. Down, on p. 210, it may appear that I have advocated the form of Raby Castle. By no means I do recommend this variety, which is a type of saw-edged or imbricated Carnation, as being worth cultivation. The American growers look for regularity in the imbrications, which is not to be found in the variety mentioned. *W. J. Godfrey, Ezmouth.*

THE BRITISH OAK.—I imagine a good many botanists and foresters will agree with Professor Marshall Ward as to there being only one species of the British Oak. If a stalk or no stalk to the acorn is to constitute a species, and the numerous varieties between the two are to be regarded as "hybrids," we shall have to revise our botany in some ways. Fig. 62 in the *Gardeners' Chronicle*, p. 219, of the sessile Oak is very misleading, as the acorn there shown is an abortive fruit, of which some are almost always found near the perfect acorns. With this I send you fruits of what is called the "sessile" Oak, and also an intermediate variety with a stalk about three-quarters of an inch in length. They are both from knarled specimens growing on Loxley Chase, near Sheffield, and are



FIG. 72.—HEATHER-THATCHED GARDEN HUT. (SEE P. 246.)

We must turn out for the required service, and work for the current wages, even if a loser by the transaction. If ill or incapacitated, he must, at his own cost and keep, find a substitute. [Usually he is hired for the year, and has to provide a girl to work on the farm—his own daughter or a hired girl. Ed.]

Besides the cottages of stone, roofed with Heather, certain handy out-buildings are composed entirely of it. The Heather is tied in the same kind of bundles, and the work proceeds much as before. Fowls-houses, donkey-sheds, and summer-houses thus raised are both warm in winter, cool in summer, and very cheap and durable. The writer has had

neat-handed amateurs do their own "heather-work," a pleasant employment for leisure hours. A summer-hut such as that depicted will be found by no means a difficult task.

HOME CORRESPONDENCE.

IVY EATEN BY CATERpillARS.—Some time ago I mentioned in the *Gardeners' Chronicle* an attack that had been made upon Ivy by certain caterpillars, but was unable to find one at the time. From my description you thought it to be a looper. This year we are again troubled with the same

the naturally perpetuated descendants, I suppose, of the magnificent Oaks that grew on the same spot about 200 years ago, and which Evelyn described as being probably unmatched anywhere in the world—with clean stems for 60 feet and upwards. No attention need be paid to the disposition of the branches, or shape of tree, as distinguishing marks of species, for hardly any two Oaks are quite alike, and the same may be said of the timber, as any woodman knows who has felled much Oak. As to anyone professing to tell the pedunculate from the sessile Oak by the appearance of the timber! Will the authorities mentioned undertake to perform that feat if samples are sent to the Royal Horticultural Society's Scientific Committee? I might procure them the opportunity. That the pedunculate Oaks at Chatsworth are dying and the sessile flourishing from the causes stated by Mr. Fisher, will be news to a good many. I live just on the other side of the range, and never heard of it before. Some of the most ancient and largest pedunculate Oaks in Yorkshire, mentioned in *Ivanhoe*, are growing on a poor, dry soil, close to the Yorkshire grit, "fatal error" or no. That this Oak also prefers "a very wet soil" will surprise a good many who have hitherto spent large sums on draining Oak plantations. I was in Norfolk last week, near Mundford, setting out one of the finest lots of big Oak I have ever seen, many of the trees running up to nearly 200 cubic feet. The pedunculate variety is the one most common on the estate, and grows in a dry, light sandy soil, mixed with chalk and flint, and where the rainfall seldom exceeds 20 inches. I have rarely seen such crops of acorns, and the Oak will fetch the very highest price, being finely grained and hard, but not better than trees of the sessile variety that I have often seen felled and sold at the highest price. What about the Oaks in Sherwood? They are big enough, and old enough, and grow in a dry enough soil. *J. Simpson.*

SPONTANEOUS APPEARANCE OF EXOTICS.—The spontaneous appearance in my borders of a plant which has been kindly named for me at Kew as *Abutilon avicennae*, Gärtn., has suggested to me the desirability of recording the first occurrence of exotic weeds which may in the future become naturalised. This is not the first plant which has appeared unaccountably in my garden. *Silene graticulosa*, Sieber (a native of Crete), came up on a rough rockery at Nant-y-Glyn, and was propagated from seed; also a pretty *Cynoglossum*, a native of the Himalayas. *Abutilon avicennae* is a coarse annual, with an upright stem of about 5 feet in height, large cordate leaves, and small yellow flowers, produced on axillary branches. It is said to be a native of the warmer parts of Asia, naturalised in South Europe and North America. *Alfred O. Walker, Alcombe Place, near Maidstone.*

SELF SOWN ASTERS.—We have Asters here in full bloom from seed which dropped in the ground a twelvemonth ago, and so remained good all through the winter. The plants which produced the seed were put out rather earlier than is usual. *A. J. L., Wyfold Court Gardens.*

THE CUCUMBER-MELON.—No, no, Mr. Editor, there is nothing new in this Cucumber-Melon, figured in the *Gardeners' Chronicle*, p. 204. I think it must be nearly twenty years ago [Was it not thirty years? Ed.] when I had some seed of the same species given me by Mr. James Temple, then gardener at Packington Hall. Mr. Temple had the seed from his brother, who held an appointment in China. We grew the plant out of curiosity, as it was of no earthly use, so far as we knew. I remember sending a specimen of it quite 4 feet long to the then Lord Craven, who in turn gave it to a friend of his who was fond of such curios, and who, I was informed, carried it under his arm all along Piccadilly. We grew the plant on the back bed of a Cucumber-pit, the fruit hanging down the wall towards the path, which it reached. I have no doubt there are still about the country some gardeners who were improvers with me at Combe Abbey at that time, who can verify the above statement. I am rather under the impression Mr. Harry Veitch will remember something about the introduction from China of this vegetable prodigy by Mr. Temple. At that time, I think, it went under the name of "Sooly-qua." [Here Mr. Miller is incorrect, Sooly-qua being quite different. Ed.] The above statement may perhaps be a caution to some of those aspiring young hybridists—with the impetus given them by the

late Hybrid Conference—of rushing out before the horticultural world, with the exclamation "Great Scot! look here, what a prodigious fruit I have succeeded in raising; the result of my hybridisation labours. Should I keep on, and my exertions again be blessed with similar startling productions, compared to which those monster Cabbages found by Baron Munchausen, when on his aerial flight, will certainly be eclipsed." *W. Miller, Berkswell.*

EARLY PURITAN POTATO.—This excellent Potato having been the subject of discussion in these columns recently, a note as to its early history may be interesting. Early Puritan was raised in New York State from a seed-apple by Mr. E. L. Coy, the raiser of Beauty of Hebron. In the spring of 1887, Messrs. Peter Henderson & Co. of New York sent a single tuber each to several Potato experts and leading seed-merchants in England, and in the autumn of that year offered the variety to the trade, having in the meantime received many proofs of its favourable reception in this country, notably, one from Mr. Charles Ross, of Welford Park, in which he records that from the single tuber he had raised 101 lb. Amongst those who received a sample tuber were Robert Veitch & Son, of Exeter, and as they were strongly impressed with its merits, they staged it at the Vegetable Conference held at Chiswick in September, 1889, when it was awarded the Certificate of Merit of the Royal Horticultural Society. The Potato soon became popular, and the name became so familiar, that by-and-by the distinctive title of "Early" was dropped, and it is now known throughout the United Kingdom and in the Colonies as "Puritan." So, also, is it quoted in reports of the Potato markets. *A. Hope.*

STOKESIA CYANEA.—Like Mr. W. Thompson (see *Gardeners' Chronicle*, p. 231), I have some thirty years' acquaintance with hardy exotic plants. I saw the first flower-heads of *Stokesia cyanea* that I have ever seen in July in the present year. These were at the Drill Hall, in a collection shown by Mr. Amos Perry of Winchmore Hill, and I remarked to his son, in my surprise—"What! *Stokesia* in flower now?" and he replied quite unconcernedly, "Yes; it usually flowers at this time;" and I responded, "I have never in my experience seen it at this time before." From these experiences I take it there are early and late forms of the plant. I have planted out fine plants growing in 5-inch pots in the month of April, and I have grown some fine examples in 9-inch pots, but no flower-spikes showed before the end of September, and over and over again have lifted them from the open ground in order to secure heads of bloom uninjured by frost. Of course, by the present date, plants in Mr. Thompson's and Mr. Perry's gardens would have long since ceased to flower. Obviously these stocks are identical. *E. H. Jenkins, Hampton Hill.*

POTATO TRIALS AT THE ROYAL HORTICULTURAL SOCIETY'S GARDENS, CHISWICK.—The remarks of Mr. A. Dean and "R. M." on p. 231 demand an explanation from myself. Both writers seem to miss the mark. My contention is, that the Royal Horticultural Society should, as far as possible, be a guide for the horticultural public as to what is best to grow among the many thousands of varieties of vegetables, fruits, and flowers, &c.; and that when a Certificate is awarded, it should be an intimation that the variety so honoured possesses qualities above the average. But what is to be gained by certificating what are perhaps the two best known and popular Potatoes of the day? Will anyone grow them the more? or think more highly of them? I have no wish to disparage the general good work done by the Royal Horticultural Society's committees. Such is not my intention, for I quite recognise and appreciate the work done by them. Mr. Dean may consider that he has a wide experience of Potatoes, but because it does not extend to Queen of the Earlies, it is no proof that such a variety, or rather name, is not known. It is very popular in the west, and I have sold many tons of it during the past fifteen years; but there is no need to discuss the question of knowledge, or under what name the white-skinned Beauty of Hebron should be known. We cannot get rid of the fact that it has been certificated by the Royal Horticultural Society under more than one name. As to the value of certificates it is, as Mr. Dean says, a matter of opinion, but I am afraid that if he appealed to the majority of the Covent Garden growers, he would

find that they at least place but little value on them. As to my appreciation or otherwise, I need only point to the fact that I place things before the Committees of the Royal Horticultural Society, and I should hardly go to the expense of sending exhibits 200 miles did I consider the certificates valueless. Mr. Dean says that the Fruit Committee is within its right in granting awards to old things. Then if such be the case let us have all the popular varieties of the present day certificated at once. Some of them may already have been so honoured, but among fruit I would recommend Muscat of Alexandria and Black Hamburg Grapes; Victoria and Green Gage among Plums; and Marie Louise among Pears. Of vegetables I would mention Peas Ne Plus Ultra and Prince of Wales. These, in their respective classes, are the most popular, and quite on a par with the Potatoes mentioned. *W. J. Godefroy, Exmouth, September 22.*

POLYGONUM BALDSCHUANICUM.—I can only suppose, by the unfavourable comparison with *P. bistorta* to be found in the *Gardeners' Chronicle*, p. 227, that your correspondent has not got the true plant. Indeed, there is nothing in common between the two species named, one being strictly herbaceous, low-growing, with spicate or erect columnar inflorescence, sparsely produced, and leafage large and rather coarse, and compared with the flowering, greatly overdone. This plant rarely grows more than 3 feet high. The other species is a deciduous climbing plant, small, heart-shaped leaves, woody stems, sometimes reach 20 feet in height. The flowers, too, are totally distinct. They are very numerous, produced in drooping panicles, almost the shape of a small bunch of Sweetwater Grapes. It is a good climbing plant, but whose merits cannot be judged from examples recently planted. Anyone who has a doubt about the identity of this plant, may clear the matter up by paying a visit to Kew, where the original plant as there received is still flowering freely. This plant is 12 feet high. There is a second plant at Kew near the entrance to the rock-garden from the herb ground, which has been about 18 months in its present position, and nearly succeeded in covering a worn-out Conifer. This plant is already more than 12 feet high, and can be seen at a distance of 100 yards. It is a neat and elegant climber, and we have nothing to compare with it. *E. H. Jenkins, Hampton Hill.*

—Referring to the note on p. 227 concerning *Polygonum Baldschuanicum*, your correspondent must have received from both sources an entirely wrong plant, as *P. Baldschuanicum* is not to be compared with *P. bistorta*, and there has not been flowering in August a more promising plant at Kew Gardens than this. Most of the true plants that are sold in England are of my cultivation, but your correspondent has received from his nurseryman something else. *H. F. Henkel, Darmstadt.*

NURSERY NOTES.

MESSRS. BUNYARD'S ALLINGTON NURSERIES RE-VISITED.

WE are always pleased by a visit to the fruit-tree nurseries of Messrs. Geo. Bunyard & Co., Maidstone. The Allington Nurseries adjoining Barming Station on the London, Chatham & Dover Railway include about 110 acres of land, the suitability of which for the purposes it is used needs no other illustration than that afforded by the perfect trees with which it is closely cropped.

Whatever the peculiar characteristics of any particular season, there is always more than sufficient to interest the visitor, if he inspects the amount of growth made by the fruit-trees of different kinds, of various ages, and upon different stocks, and compares the newer varieties of each that are not yet common in gardens with older sorts that have been considered to be the best of their type.

It is always a matter of great importance to the fruit-tree nurseryman that the season during which the young trees make growth is of a character favourable to rapid progress. The seasons differ so much in this respect that it would be no exaggeration to say that in some unusually good ones, the trees make double the headway that they do in

very bad ones. No season is ever a perfect one, however, and is too cold, too hot, too variable, too dry, or there is more rain than is good for the trees.

The first question we addressed to Mr. George Bunyard, who met us at Barming Station, and complimented us upon arriving to time, because our train was not more than twenty minutes late, was upon this subject. Mr. Bunyard's reply was—"Growth has been good, but not excessive, as you will see; and although we have not suffered from lack of surface-moisture during the season, the ground some little distance below the surface has been drier than we like it." But in a nursery like this at Allington, a growth is termed moderate that in other districts we should consider to be much above average; and so, although we have seen rather longer growths upon the maiden Apple, Pear, and Plum-trees at Allington than they have made this year, they are nevertheless grand specimens of perfect cultivation.

bearer, and every tree we noticed, young or old, was laden with fruits. "Jargonelle," said Mr. Bunyard, "has been grand upon the Quince stock this season, and," he added, "so far as our experience goes, neither it nor Marie Louise need be double-worked." Fondante de Tirriot, Emily Heyst, and Princess are all favourite Pears that were noticed with exceedingly heavy crops of fruit. Durondeau, with its deep brown, russety fruits of great length, were a marvellous crop; and then, passing through some batches of excellent Pear-trees of one and two years old, we next inspected some rows of trees of newer varieties. Here was Rivers' New Parrot, which has a flavour resembling Gansell's Bergamot, and of which Mr. Bunyard said: "It is a valuable Pear, and a grand cropper." There was Directeur Hardy also, and Beurré Fouquerey (Veitch), Marguerite Marillat, and Beurré Jno. Van Geert, which is a good-looking fruit, and is to be brought out specially as a market Pear. There were several continental varieties that were interesting, but the

batches of trees of different ages, and suitable for pyramids, standards, bushes, cordons, or other espalier form. As in the case of Pears, the stocks are raised in the nursery, and the firm therefore know exactly the type of stock they are using. Before inspecting the standard varieties, our attention was drawn to the new variety Mrs. Phillimore (fig. 73), raised by Mr. Ross, of Welford Park Gardens, from a cross between Cox's Pomona and Gladstone. Mr. Bunyard describes its flavour and aroma to be similar to that of American Mother, a very delicious variety. The tree is a capital bearer, and the fruits resemble in form those of Cox's Pomona, but ripen early in the month of October. The Fruit Committee of the Royal Horticultural Society gave the variety an Award of Merit on Nov. 7 last. Ben's Red is another new Apple to be sent out during the coming season, and is recommended as an early, brilliantly coloured Apple, especially useful for market-growers. It ripened early in September, obtained an award of merit on September 12 last year, and was subsequently illustrated in these pages. Of well known varieties, the stock of Cox's Orange Pippin most surprised us. They are a grand lot, and there is an immense quantity of them. Allington Pippin, an excellent Apple distributed by Mr. Bunyard several seasons ago, is still doing well, and crops freely. It will be found to succeed in some soils where Cox's Orange Pippin will not, but it requires to be budded upon the Quince stock, or it will not fruit nearly so early. Golden Spire and Duchess of Oldenburgh, both of them favourites in Kent, were cropped very heavily, as were James Grieve, a capital Apple, almost equal to Cox's Orange Pippin; Emperor Alexander, Transparent de Croncelles, a very beautiful fruit; Cardinal, also a pretty Apple, with uncommon colour and finish; Emperor Napoleon, Foster's Seedling, Barnack Beauty (fig. 74, p. 251), a capital market Apple; and Rivers' Belle de Pontoise, which has proved to be a very valuable Apple. Not less remarkable were Lane's Prince Albert, Seaton House, and Royal Jubilee. The last-named variety has been planted amongst others in the orchard, and it is making most admirable trees from every point of view.

CHERRIES, PEACHES, PLUMS.

A specialty of Messrs. Bunyard's are Cherry-trees. There is no county like Kent for Cherries, and none where a greater number of these trees are cultivated. It is not a wonder then that they are raised in large numbers at Allington; but it would surprise most fruit-growers could they see the extensive stock of trees there is there at present. There are more than 2000 trained trees of sweet Cherries, and of standards there seems to be tens of thousands. Altogether, it is estimated there are of Cherry-trees and Cherry stocks, some 140,000; and the quality of the trees is not a whit less remarkable. The shoots are as straight as arrows, the stems smooth as glass, and the leaves most healthy, and trees one year old are 6 feet or more high. Some standards in the new addition to these nurseries, and upon the other side of the public road, are so straight and perfect in every respect that they might be described as the most remarkable feature in the nursery. Messrs. Bunyard will distribute stock of the new Cherry known as The Noble, and figured in our columns, Aug. 18, 1900. It is a very large Morello in appearance; three fruits have weighed an ounce, and it is perfectly sweet. It has been awarded the First-class Certificate of the Royal Horticultural Society.

Peaches and Nectarines, like all other fruit trees, succeed perfectly, and the stock of trained and untrained trees is an immense one. There are more than 2000 standard-trained Peach-trees, having stems more than 18 inches high. The growth upon Peaches is just as free as upon other trees, and the stems are uncommonly red, showing that they have already reached a considerable degree of maturity.

Plums are grown as standards, bushes, or fan-shaped for walls, and may be seen in very large quantities, especially the choicer varieties.

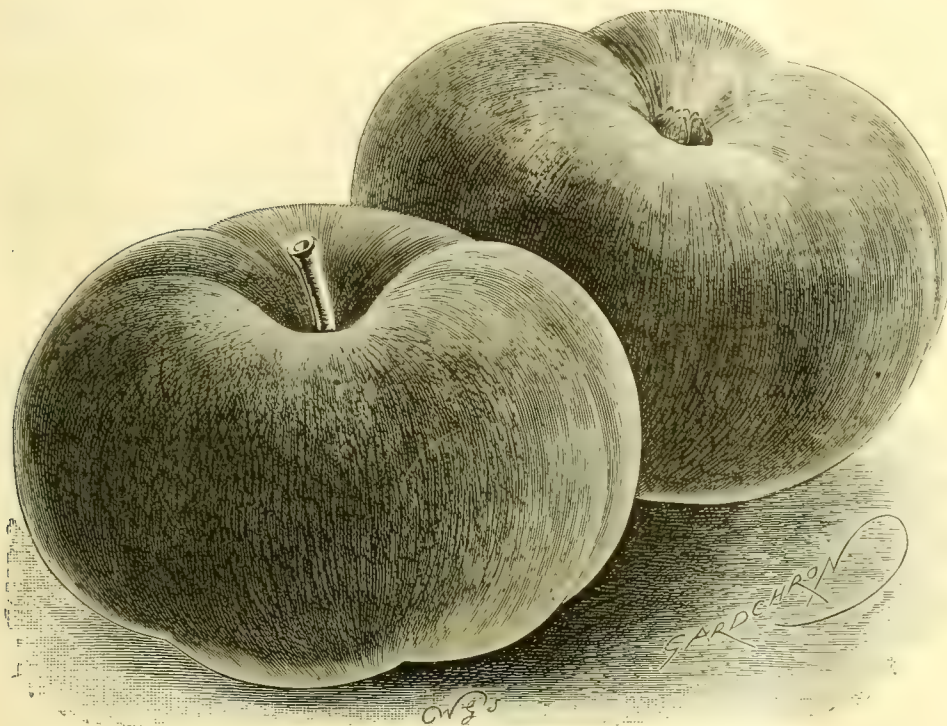


FIG. 73.—APPLE MRS. PHILLIMORE.

PEARS.

In the matter of cropping also, there is much difference in a fruit-tree nursery every season. We have never seen even the young Pear-trees at Allington carry such crops of fruit as they do this season. Not only are free-bearing varieties alluded to, but all varieties, and this may very seldom indeed be said in the case of Pears, because there are so many that appear to fail when

rs have big crops, that it would seem they require very different climatic conditions. But they are all, or very nearly all, bearing crops now, and some of the more noticeable among these we find recorded in our note-book. Dr. Jules Guyot, for instance, is a Pear that has a very close resemblance to Williams' Bon Chrétien, the fruits as growing being hardly distinguishable from it. But Mr. Bunyard, who seems to know varieties of fruit-trees by their leaves and shoots as easily as by their fruits, recommends this early-ripening Pear as possessing a freer habit than Williams', and of especial value to cultivators of fruit for market. Conference is a well-known Pear, and is thought very highly of at Maidstone, being a splendid

characteristics of which are not yet sufficiently well known for an estimate of their value to be made. Then we saw well laden trees of Fondante d'Automne, Pitmaston Duchess, Marie Louise, Josephine de Malines, Doyenné Boussoch, Madame Treyve, Louise Bonne of Jersey (on cordons), Belle de Juli, "a grand Pear," said Mr. Bunyard, "but little known and associated with the month of July probably, because it ripens in November;" and the new Triomphe de Vienne, which will be likely to become a very popular Pear, for it has first-class quality; Brown Beurré and Beurré Benoist. We also saw a new Pear known as Michaelmas Nelis, which is to be sent out by Messrs. Bunyard during the coming season. Trees were growing upon the Quince stock, and it is described as being more vigorous, shorter jointed, and freer in bearing than Winter Nelis, of which it is a seedling; but the fruits have the fine quality of that variety, and they ripen about Michaelmas.

APPLES.

Some idea of the stock of Apple-trees may be obtained from the fact that 60,000 Paradise stocks have been budded this year. There are fine

GOOSEBERRIES, CURRANTS, STRAWBERRIES, AND RASPBERRIES.

Gooseberries are cultivated in several shapes, including standards, which are worked upon Ribes aureum, but it is an expensive system. A new Gooseberry is to be sent out next season under the name of May Duke, and is especially recommended as an early-fruited variety.

The bushes of Black Currant looked well, and the mite is kept away by spraying the bushes twice during the season with a disagreeable liquid, as Quassia, &c. Mr. Bunyard has an extra vigorous variety of the Black Currant under the name of Boskoop Giant. It shows extraordinary vigour of growth, produces bigger bunches of fruit, and the individual fruits are larger than any other variety. It is thought possible that the variety will be less susceptible to injury from the mite.

Raspberries are cultivated at the farm nurseries, where Messrs. Bunyard have another area of land of 200 acres. Here also the Strawberries are grown, for which the firm has a great reputation. At this time the autumn-fruited varieties St. Joseph, Jeanne d'Arc, Antoine de Padoue (see fig. in *Gardeners' Chronicle*, July 28, 1900), and La Constante d'Automne, are fruiting freely.

MISCELLANEOUS.

We have already used the space at our disposal with remarks upon the fruit-trees, but it should be mentioned that Messrs. Bunyard cultivate a large stock of Roses, and their collections of forest and ornamental trees and shrubs, and of hardy flowering plants are large and good. At the Farm Nursery there are some forty acres of forest trees, Pines, and Spruce Firs. At the same place there is half an acre of the best varieties of Violets, including La France, Mrs. Astor, and Princess of Wales.

It is on this farm that choice seeds for that branch of the business are grown, and also seed Potatoes and Asparagus plants.

The several small nurseries with glasshouses in Maidstone are replete with usual nursery stock; Bouvardias and Cyclamens being very fine.

A new early-fruited Filbert from these nurseries, with prettily-frilled husks, and called Early Proflig, was given an Award of Merit by the Royal Horticultural Society's Fruit Committee on the 11th inst.

THE BENJAMIN CANT MEMORIAL PRIZE.

The following contributions have been promised—The Very Rev. the Dean of Rochester, £5; Charles J. Grahame, £2; The Rev. A. Foster Melliar, £1; The Rev. F. Page-Roberts, 10s.; The Rev. R. Burnside, £1; George Prince, £1; George Paul, £1; The Rev. H. H. D'Ombrian, £1; Edward Mawley, £1. The names of those who wish to contribute may be sent to either of the Hon. Secretaries of the National Rose Society.

LETTUCES AND SPINACH.—On hot, dry soils, where Lettuces are apt to "bolt"—as premature running to seed, instead of forming hearts, is technically called—the recent spell of hot, dry weather has caused them to exhibit this vagary in a very pronounced manner. Cultivators of such land and unfortunate possessors of such Lettuces may, therefore, be pleased to hear of a way in which the "bolting" nuisance may be made to turn out somewhat of a blessing in disguise. Pull all such Lettuces up by the roots, and trim off the latter, with any very bad lower leaves and the toughest parts of the stems, and lay the tops and better leaves in cold water, to which a little salt has been added. Allow them to remain an hour or so in this, then thoroughly wash and plunge them into a saucepan of boiling water, to which a pinch of salt and borax of soda has been added. Boil until tender, which will be from twenty minutes to half-an-hour, then strain, chop, add a little butter and pepper, and serve. Lettuces treated in this way are fully the equal of Spinach; in fact, better than Spinach, as they have, in addition to a true Spinach flavour, a strong suspicion of that of Asparagus, and I would strongly recommend all gardeners to give them a fair trial. "*The Gardener*."

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 25.—If there had been but an indifferent show in connection with the meeting of the Society's committees at the Drill Hall, James Street, Westminster, on Tuesday last, it would hardly have been surprising, seeing that only one day would intervene between that date and the opening of the Great Fruit Show at the Crystal Palace. But the display was not only as good as usual, but considerably larger, and the Hall was quite filled, several exhibitors who had not applied for space until Tuesday morning being unable to obtain places.

The ORCHID COMMITTEE was, however, exempt from much labour, for after the granting of a Medal to the one group that was staged, nothing was needed to be done. We have an idea that for some years until Tuesday this committee has not met unless it has granted one or more Certificates or Awards of Merit.

The FLORAL COMMITTEE had before it a very large number of Dahlias, both groups of flowers, and seedling varieties that were shown for Certificates; and a considerable number of Awards of Merit were made to these. Other plants obtaining Awards from the Floral Committee were *Sternbergia macrantha*, *Colchicum speciosum album*, *Nepenthes Chelsonii* excellens, *Helianthus* × *H. G. Moon*, *Tamarix kashgarica*, and *Rose Mrs. B. R. Cant*.

The FRUIT and VEGETABLE COMMITTEE recommended an Award of Merit to a new variety of Grape named Prince of Wales, and shown by Messrs. JAMES VEITCH & SONS.

The FLORAL COMMITTEE of the NATIONAL DAHLIA SOCIETY met, and made Awards to fourteen new varieties of Dahlia.

In the afternoon a LECTURE was delivered by Mr. Peter Kay on "Saving and Using the Rain," and excellent hints were given upon means that may be taken to make the best use of amount of rain that falls each year. Mr. Ed. Mawley (chairman) and other Fellows afterwards joined in an interesting discussion of the subject.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. Chas. T. Drury, H. B. May, R. Dean, Harry Turner, George Paul, H. J. Jones, E. H. Jenkins, Jas. Walker, J. T. Bennett-Poe, J. D. Pawle, E. T. Cook, J. F. McLeod, Jas. Hudson, J. Fraser, and H. Seife Leonard.

Messrs. W. W. JOHNSON & SON, Boston, Lincolnshire, who had a collection of Sweet Pea flowers at the last meeting, again showed a considerable number of bunches, representing about fifty varieties.

Mr. H. B. MAY, Dyson's Road Nursery, Upper Edmonton, showed a few very excellently cultivated plants of the variety of the Begonia Gloire de Lorraine, named Mrs. Leopold de Rothschild, which was given an Award of Merit about twelve months ago. The variety is a sport from the type, and is more vigorous, produces larger flowers, the leaves being a shade darker green, and the flowers several shades lighter in colour than Gloire de Lorraine. They were shown over a groundwork of lovely Adiantums of several species (Silver Banksian Medal).

MESSRS. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, made a fine exhibit of *Nepenthes* in the excellent manner this firm has usually shown these choice plants. All the specimens staged carried a large number of well-developed pitchers. Those that were especially attractive from this point of view were *N. Dicksoniana*, *N. Amesiana*, *N. Morganiana*, *N. cylindrica*, with pale green pitchers; *N. Wrigleyana*, *N. Burketi* excellens, and the mammoth *N. Sir W. T. Thelston Dyer*, which has pitchers very much larger in size than any other variety, and which we hope to illustrate in these pages shortly; *N. Balfouriana*, *N. Mastersiana*, of grand colour; *N. Chelsonii* excellens, *N. mixta*, *N. Curtisii*, *N. Hookeriana*, and *N. Rafflesiana*, &c. Messrs. JAS. VEITCH & SONS also made a display with varieties of *Helianthus rigidus*, *H. multiflorus*, and *Rudbeckia laciniata*, a splendid effect being obtained by interspersing with these some large bunches of finely-developed flower-spikes of *Kniphofia*, *K. uvaria* Eclat, and *K. Victor Lemoine*, *K. Chloris*, a pale-coloured, new variety; *K. Corallina*, *K. MacOwani*, and others were noticed. (A Gold Medal was awarded for the two exhibits.)

Mr. NORMAN DAVIS, Framfield Nurseries, Sussex, made a magnificent exhibit of Michaelmas Daisies (Asters), showing great bunches of them in large trumpet and other ornamental vases, in the same manner this and other exhibitors have adopted in respect to the Chrysanthemum. Such varieties as *A. Novi-Belgiae* Areturus, light purple; *N. B. Purity*, white, with yellow disc; Shortii, mauve colour, had a beautiful appearance in the great trumpet glasses; and in the dwarf vases *A. Amellus* Distinction, *A. A. Onward*, *A. A. bessarabicus*, &c., &c., were equally effective. The smaller-flowered varieties of cordifolius were exhibited, and many other varieties (Silver-gilt Banksian Medal).

Mr. H. J. JONES, Rycroft Nurseries, Hither Green, Lewisham, showed bunches of selected varieties of Michaelmas Daisies, and a group of nice plants of Begonia Gloire de Lorraine; also B. Moonlight, a pretty winter-flowering variety, with white flowers; B. Richardsoniana, also with white flowers, &c. (Silver Flora Medal).

MESSRS. BARR & SONS, 12, King Street, Covent Garden, London, showed cut flowers of hardy species, in which were choice varieties of the shrubby Phlox, perennial Asters, Gladioli, Pompon and Cactus Dahlias. A few varieties the China Aster had been lifted from the open ground, and were shown in pots, and the brightly-coloured flowers of *Vallota purpurea* were borne numerously by plants in pots (Bronze Banksian Medal).

MESSRS. PAUL & SON, Cheshunt, had a collection of hardy flowers, composed principally of shrubby Phloxes, Gaillardias, Coreopsis, *Helianthus giganteus*, *H. rigidus* Miss Mellish, *Anemone japonica* rosea, *Scabiosa caucasica*, and a considerable number of varieties of garden and decorative Roses. There were also plants of *Cyclamen hederifolium* and *H. album*, and *Colchicum* species (Silver Flora Medal).

MESSRS. ISAAC HOUSE & SON, Coombe Nurseries, Westbury-on-Trym, near Bristol, showed a collection of shrubby Phloxes and of Pentstemons. The varieties of each were very choice ones, and amongst the Pentstemons President Carnot, Phryne, Catulle Mendes (the greater part of the flower white, with very little rose colour), Champ Elysées, Le Prophète, Paul Verlain, &c., were very fine.

Mr. AMOS PERRY, Hardy Plant Farm, Winchmore Hill, showed a capital collection of hardy flowers, including some fine perennial Asters and other species, but the exhibit was necessarily placed in a position where little light fell upon it, and its effect was less than it would otherwise have been (Silver Flora Medal).

MESSRS. W. PAUL & SON, Waltham Cross Nurseries, Herts, again made a display with cut Roses, showing great clusters of large blooms of free-flowering varieties, many of which have been raised at the Waltham Cross Nurseries (Silver-gilt Flora Medal).

Mr. BENJ. R. CANT, of Colchester, also made a very gay exhibit of cut Roses, in which many of the best decorative and garden varieties were shown in excellent condition (Silver Banksian Medal).

Bamboos were shown by Mr. J. RUSSELL, Richmond Nurseries, Richmond, Surrey. Fine plants in pots were exhibited, some of them 8, 9, and 10 feet high. Amongst them we noticed *Phyllostachys aurea*, *Bambusa Metake*, *B. nigra*, *B. palmata*, *Arundinaria Simonii*, *A. macrophylla* glauca, &c. (Silver Banksian Medal).

Cut flowers of Nerine Fothergilli, and of the old and well known *Calceolaria amplexicaulis* were shown by Mrs. EVANS, Forde Abbey, Chard (gr., Mr. J. Crook).

MESSRS. W. CLIBRAN & SONS, Altrincham, Cheshire, showed a few plants of a good strain of *Celosia pyramidalis*, and of a rose-coloured Cockscomb of rather new tint.

Thladiantha dubia, a hardy cucurbitaceous climber, was shown in fruit by Messrs. JAS. VEITCH & SONS. The leaves are undivided, ovate, with exceedingly rough surfaces. The large, dull red, Gooseberry-like fruits, 2½ inches long, have a very decorative appearance. We hope to publish an illustration of these shortly.

DAHLIAS.

In addition to a large number of seedling Dahlias shown for Certificates by many exhibitors, there were several large displays of cut blooms staged. By far the most extensive of these was one from Mr. JOHN GREEN, Dereham Nurseries, Norfolk. This exhibitor had a large stage with six or seven shelves upon it, and showed Cactus blooms in bunches, in vases, placed so closely together that a long bank of bloom, almost perpendicular and 6 feet deep, was presented to view. About 2,000 fine blooms were used in this display, and it was the most remarkable exhibit of Dahlias, from some points of view, that we have ever observed at the Drill Hall, although we think the effect was not so pleasing as might be obtained from many other methods of arrangement. However, this collection was a prominent feature at the meeting, and much time and expense had been expended upon it. A good number of blooms of each variety shown were grouped together, and the collection included very many sorts. Especially prominent were Red Rover, Lucius, Wm. Cuthbertson, Major Weston, Uncle Tom (deepest crimson), Magnificent, Zephyr, Ranji, Night, Mrs. Sanders (yellow), and Baden-Powell (new) (Silver-gilt Flora Medal).

Mr. J. T. WEST, Tower Hill, Brentwood, had a considerable exhibit of Dahlias, of Pompon, show, and Cactus varieties (Silver Flora Medal).

MESSRS. KEYNES, WILLIAMS & CO., Salisbury, showed a collection of Cactus Dahlias, for which they were awarded a BRONZE Banksian Medal.

Another collection of Dahlias was exhibited by Mr. M. V. SEALE, Sevenoaks (Silver Banksian Medal); another by Mr. J. STREDWICK, Silver Hill Nursery, S^d. Leonards (Silver Banksian Medal); and another by Mr. C. TURNER, Slough.

CHRYSANTHEMUMS.

Chrysanthemums in pots were again shown by Mr. J. H. WITTY, Nunhead Cemetery, S.E., who on this occasion staged three connected, semi-circular groups, including the best early-flowering varieties in capital form. In front of the groups was a line of plants of a variety with small flowers in 5-inch pots, and about 9 inches high, at the same time being most profusely flowered (Silver-gilt Banksian Medal).

MESSRS. W. WELLS & CO., Earlswood Nurseries, Redhill, Surrey, exhibited a group of cut Chrysanthemum-blossoms of large size and good colour, all of which had been cut from plants cultivated in the open ground. Some of the most noteworthy were Victor Maw, a large, white Japanese flower; Miss Ruth Williams, a yellow Japanese; Queen of the Earlies, white and yellow-flowered varieties; Madame Liger Ligneau, a rich yellow-coloured Japanese, &c. Border varieties included Ivy Starke, crimson; Marie Masse, Madame Gage, rosy-purple; Market White, Mytchett White, Mr.

Selby, mauve-coloured Pompon; and Jules Mary, &c. (Bronze Banksian Medal).

Mr. W. J. GODFREY, Exmouth Nurseries, Devonshire, showed three plants of *Chrysanthemum* Little Mitchell, a buff-coloured, smooth-flowered, Japanese variety, of a type suitable for market growers.

Awards.

Lord Roberts (Stradwick), white Cactus variety, with delicate citron centre, a very red-dyed white variety which, if constant, will be warmly welcomed by exhibitors. Mrs. Jowitt (J. Stradwick), (C), apricot, slightly shaded with coppery-red on the points of the florets, distinct. General French (J. Stradwick), (C), orange and apricot-shaded, a distinct and desirable colour of good Cactus shape. Bessie Mitchell (C), (Stradwick), yellow ground suffused and tipped towards the points of the florets with mauve: extra fine (Certificate of Merit, National Dahlia Society); and Prince of Yellows (S. Mortimer), (C), a large and striking deep yellow variety of great merit, which promises to be invaluable for exhibition purposes; and Kathleen (C.) (F. W. Sharp), light orange-red, very fine quality; Pompon, Doris (F. W. Seale), pink, suffused with lilac, and a tinted mauve centre, compact, and of the best form; Pompon, Thalia (F. W. Seale), pale rosy-pink, paling to creamy-white in the centre, a very pleasing variety; and Pompon Venus (J. Cheal & Sons), of Cactus form, and white in colour; if it is free-flowering, and produces its blooms on long stems, it will be likely to become useful for cutting

5 in. high, and the petals $1\frac{1}{2}$ in. long, and very wide, imbricated and obtuse. From Mr. JAS. HEDDER, who also exhibited *S. lutea* and *S. l. major*, &c. (First-class Certificate).

Tamarix luteopurpurea.—This was shown by Mr. F. W. MOORE, Curator of the Botanic Gardens, Glasnevin, Dublin, and is said to come from Western Asia; it has long, erect racemes of purple blooms (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair, and Messrs. Jas. O'Brien (Hon. Sec.), de B. Crawshaw, J. Coleman, A. H. Smee, H. Ballantine, H. Little, J. Gabriel, H. J. Chapman, W. H. Young, H. A. Tracy, E. Hill, T. W. Bond, J. Jaques, C. Winn, T. Rochford, and H. M. Pollett.

The display of Orchids was of interest to many, on account of the numbers of hybrid Cattleyas, Lælias, and Lælio-Cattleyas, which formed the major portion of the exhibits, which contained many fine and handsome flowers, though in consideration of the large number of similar things previously certificated, the Committee were unable to make any awards, other than that of the Silver Flora Medal, which was accorded to Messrs. JAS. VEITCH & SONS, Ltd., for a remarkable display, made up of fine examples of their showy Lælio-Cattleya \times Nysa (L. crispum \times C. Warszewiczii); several very fine L.-C. \times callistoglossa (C. Warszewiczii \times L. purpurata); L.-C. \times Parysatis (L. pumila \times

HENRY LITTLE, Esq., Baronshalt, Twickenham (gr., Mr. Howard), showed cut spikes of Cattleya \times Hardyana, Little's variety, a beautiful form, with white sepals and petals, finely mottled with purple, through which ran a white veining; and rich purple lip, with orange markings; also the originally certificated Cattleya \times Mantini (Bowringiana \times Dowiana), still the brightest in colour; a fine form of Lælio-Cattleya \times elegans, L.-C. \times Sallieri, and L.-C. \times velutino elegans.

Mr. Jas. Hamilton, gr. to Sir JAS. MILLER, Manderston, Duns, N.B., sent spikes of Cattleya \times Bowringiana-velutina, in general appearance resembling a lilac-purple-hued form of Cattleya Bowringiana, but with the flat, circular-fronted lip of C. velutina.

NORMAN C. COOKSON, Esq., Oakwood, Wylam, Northumberland, sent flowers of Cattleya \times Hardyana, Oakwood variety, from home-raised plants; and C. \times Lord Rothschild (Gaskelliana \times aurea).

F. A. REIDER, Esq., The Avenue, Gipsy Hill (gr., Mr. R. Norris), showed *Cypripedium* \times Mrs. Rehder (Argus \times Rothschildianum), a distinct hybrid with striking flowers. The upper sepal was ovate, acuminate, white, with narrow green and purple lines; petals greenish, tipped with rose, and bearing long blackish blotches like the best varieties of C. Argus; lip greenish, tinged with brown; staminode with emerald green veining.

Messrs. HUGH LOW & Co., The Nurseries, Bush Hill Park, showed the pretty Cattleya \times Maroni (velutina \times aurea); a good white C. Gaskelliana alba, and *Oncidium Papilio*.

Col. SHIRWAY, Grove House, Chiswick, showed a good plant of *Vanda Sanderiana*, with two flower-spikes.

Fruit and Vegetable Committee.

Present: Philip Crowley, Esq., Chairman; and Messrs. W. Wilks, W. Poupart, P. C. M. Veitch, H. Esling, A. F. Barron, E. Shaw Blaker, A. H. Pearson, Geo. Kelf, Alex. Dean, S. Mortimer, W. Bates, Ed. Beckett, Geo. Wythes, F. Q. Lane, Jas. Smith, Thos. Coomber, and Jas. H. Veitch.

Her Majesty THE QUEEN, Frogmore (gr., Mr. Owen Thomas), exhibited a fine collection of ripe Plums, showing about fifty varieties. Some of the varieties in best condition were Brahy's Green Gage, White Magnum Bonum, Kirke's, Lawson's Golden Gage, Jefferson's, Coe's Golden Drop, Pond's Seedling, Monarch, Golden Esperen, Ickworth Imperatrice, &c. (Silver Knightian Medal).

A collection of vegetables was shown by Miss ADAMSON, South Villa Gardens, Regent's Park (gr., Mr. Geo. Kelf), which, when we remember that the produce was grown in a garden within two miles of Charing Cross, may be described as more than satisfactory. The collection was very representative, indeed exhaustive, and the quality of the different kinds was worthy considerable praise (Silver Knightian Medal).

Nice specimens of Model White Turnip were shown by Messrs. DOBBIE & Co., Rothesay, N.B.

Mr. Beckett, gr. to Lord ALDENHAM, Aldenham House, Elstree, exhibited fine roots of Parsnips, Tender-and-True, and The Student. The former variety has many points of value that the Student does not possess, and Mr. Beckett has a very high opinion of it.

Capsicums and Obilis were splendidly shown by Mr. E. BECKETT. There were about eighteen varieties in the collection, and three plants were shown of each. From Capsicum Little Gem, to Capsicum Red Giant and Chile Coral Red, to C. Mammoth Long Red, they were all interesting (Silver Knightian Medal).

Peach Late Devonian, was shown by Messrs. ROBERT VEITCH & SONS, Exeter, who had several dishes of good fruits of this variety.

Plum Pond's Seedling, as shown by Mr. J. KEY ALLEN, Bitterne Park, Southampton, was awarded a Cultural Commendation.

Awards.

Grape Prince of Wales.—This is a new black Grape exhibited by Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, and said to be a sport from the variety Mrs. Pince. Three fine bunches were shown, which in form resembled in some degree those of Madresfield Court, but they were more shouldered, and the berries are less long, being almost round. They carry a fine bloom, and have a pleasant, brisk flavour. The fruit is said to remain good until May. The variety promises to become a very valuable addition to long-keeping black Grapes (Award of Merit).

CACTUS DAHLIAS AT CHISWICK.

A considerable number of these, old and new, were planted out in the Chiswick Gardens, to afford a trial, and on the whole they have done remarkably well, but most of them are late in blooming. Not having been thinned in any way, the plants have spread so much towards each other as to form a kind of jungle, and should the trial be carried on another season, it will be well for each plant to be put fully 6 feet apart from its fellow. It is advisable also that all the plants be put out in the open not later than the first week in June. The Floral Committee on the occasion of a recent visit estimated the Cactus Dahlia according to their adaptability as border plants, and as there had been neither thinning nor disbudding, a proper conception of the habit of growth could not be formed. It is satisfactory to know that some of the newer varieties show a decided improvement in the matter of habit over the older forms.

Three marks were given to each of the following varieties:—Exquisite, $3\frac{1}{2}$ ft.; Mary Service, $3\frac{1}{2}$ ft., one of the best; William Cuthbertson, 4 ft.; Night, 4 ft.; Magnificent, $3\frac{1}{2}$ ft., an excellent garden variety; Mr. John Goddard, 4 ft.; Britannia, 3 ft.; Alfred Vasey, 3 ft.; Standard Bearer, 4 ft.

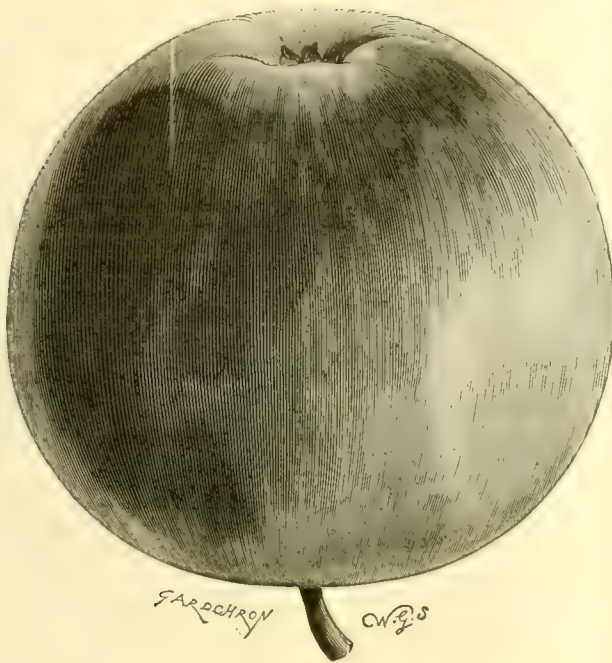


FIG. 74.—A GOOD MARKET APPLE, BARNACK BEAUTY.
(SEE P. 249, COL. C.)

purposes. Single Dahlia, Shamrock (J. Cheal & Sons), crimson ground, tipped with lilac, a little large, but of stout texture, and fine shape—a desirable addition to the fancy varieties. Awards of Merit were given to each of the varieties enumerated above.

Colchicum speciosum album.—A pure white variety of C. speciosum, and one that will be sure to meet with appreciation. Shown by Mr. J. HUDSON, gr. to LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (First-class Certificate).

Helianthus \times H. G. Moon.—This is a single-flowered Helianthus; colour rich yellow, and the blooms are about 5 inches across. It is said to be the result of a cross between H. latiflorus and H. multiflorus. From Messrs. BARR & SONS, King Street, Covent Garden (Award of Merit).

Nepenthes Chelsonii excellens.—N. Chelsonii was obtained by crossing N. Rafflesiana with a small-flowered species, and the new variety, excellens, is the result of crossing N. Rafflesiana with its offspring, N. Chelsonii. N. Chelsonii excellens is a very great improvement upon the first cross, both in colour and size of the pitcher. The pitcher is deeper and broader than that of N. Rafflesiana, and therefore very much larger than those of N. Chelsonii. From Messrs. JAS. VEITCH & SONS (First-class Certificate).

Rose Mrs. B. R. Cant.—A decorative Tea Rose, with full flowers of rose colour, with lighter colour at base of petals; very free, and apparently a good grower. From Mr. B. R. CANT, Colchester.

Sternbergia colchiciflora (macrantha).—This is a very ornamental yellow-flowered Sternbergia, blooming at this date, but which produces its leaves in spring. The flowers are about 4 to

L. Bowringiana); L.-C. \times Ingrami (L. pumila \times C. Dowiana); L.-C. \times Cornelia (L. pumila \times C. labiata); L.-C. \times Bryan (L. crista \times C. Gaskelliana); L.-C. \times Isis (C. Mastersoniae \times L. pumila); L.-C. \times Epicasta (L. pumila \times C. Warszewiczii); Lælia \times splendens (crispa \times purpurata); L.-C. \times Novelty, and various hybrid Cattleyas, among which the more remarkable were C. \times Mrs. J. W. Whiteley (Bowringiana \times Hardyana), whose flowers resembled a large rose-coloured C. \times Mantini, specimens of which were also shown; and C. \times Chloe (bicolor \times Bowringiana ?), with sepals and petals rose-purple; lip dark purple, and formed like that of C. bicolor, the side lobes being small and the middle one extended. Also in the group were the showy *Cypripedium* \times Baron Schroder (Fairieanum \times ceananthum superbum), and other *Cypripediums*.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), showed some very handsome hybrid Lælio-Cattleyas, two of unrecorded parentage, being similar to fine forms of Lælio-Cattleya \times callistoglossa; also a still larger flower, nearly 10 inches across, with very rich purplish-crimson lip, and said to be a hybrid between Lælia tenebrosa and Cattleya Warszewiczii—the same parentage as that stated for L.-C. \times Bletchleyensis. Sir F. WIGAN also showed a pretty form of Cattleya \times Le Czar (Imperator) named Wigan's variety. The sepals and petals were pale whitish-rose colour; the large showy lip purplish-crimson, the isthmus having a yellow margin. It is a supposed natural hybrid between C. granulosa and C. labiata; and the original plant shown by Messrs. Linden was illustrated in the *Gardeners' Chronicle*, November 14, 1896, p. 593. Another pretty exhibit was Cattleya \times Greya (granulosa Schofieldiana \times velutina), with sepals and petals bronzy-rose colour, the veined labellum showing distinctly the features of C. velutina.

Profusion, 4 ft.; Countess of Lonsdale, 3 ft.; Ruby, 4 ft.; Matchless, 4 ft., very free; Dr. Jameson, 3½ ft.; Austin Cannell, 5 ft.; and Miss Finch, 4 ft. The three following decorative varieties were also awarded three marks for their freedom of bloom and usefulness for cutting:—King of Siam, dark; Crimson King, crimson; and Salisbury White, white. The former is about the height of 3½ ft., and the other two 5 ft. to 6 ft. Three marks were also given to Tommy Keith (Pompon), crimson, tipped with white, 3 ft., compact in growth, and producing an abundance of blooms on stiff stalks making it an excellent variety for cutting.

NATIONAL DAHLIA.

SEPT. 25.—The Floral Committee of this Society met at the Drill Hall, Westminster, and awarded Certificates of Merit to the varieties enumerated below:—

Berenice (J. Burrell & Co.) a greatly-improved Countess of Gosford, richer in colour, and of a better Cactus type; the basal petals suffused with red, and having a pure yellow centre; Floradora (G. Humphries), colour crimson, of a very fine Cactus type; Major Hobbs (J. Humphries), carmine rose, bright and showy, excellent Cactus character; Cheal's White (J. Cheal & Sons), delicate ivory, a promising white Cactus variety of excellent character, which looks as if it would be constant; Lord Brassey (J. Stredwick), rosy-pink, or pink shaded with rose, perfect Cactus, a distinct and very pleasing variety; Jealousy (J. Stredwick), pale yellow, of the most approved Cactus type, an excellent addition to this shade of colour, and Prince of Yellows (Mr. S. Mortimer), Bessie Mitchell (Mr. Stredwick), and Kathleen (Mr. F. W. Sharp), all Cactus varieties; Venus (Messrs. Cheal & Sons), described as a Pompon Cactus variety; Violet (J. T. West), an ivory-white Pompon variety, with slightly yellow centre, fine shape. Thalia (Pompon) (Mr. Seale), Gracchus (Turner), a buff flower, with a slight reddish tint on the reverse of the petals, a showy variety, that when closely shaded it would probably become an exquisite self of a soft golden buff colour; and Duchess (G. St. Pierre Harris), delicate buff yellow show variety, with a slight shading of pale red on the reverse of the central florets.

Varieties mentioned above, but not described, are remarked upon in our report of a meeting of the Royal Horticultural Society on p. 250.

* * * For Crystal Palace Show see Supplement.

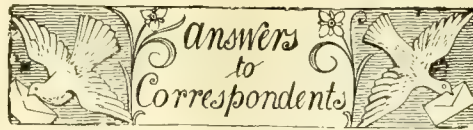
ENQUIRY.

GERBERA JAMESONI.—A correspondent, signed "X. Y. Z.," living in Northumberland, writes as follows:—"I have in pots under glass several plants of Gerbera Jamesoni: some are seedlings this year; others two-year old plants." He would be grateful if some of our correspondents would tell him what is the best winter treatment. Should water be now withheld so as to dry them off, and what sort of house is most suitable? Perhaps near the glass in a house where Cinerarias, &c., will be grown, and where they now are, would do? "I purpose planting out next year."

Obituary.

JAMES MAITLAND.—This well known and highly esteemed gardener succumbed to a lingering illness on Thursday evening, Sept. 20, at his home at Cawdor Castle, Nairnshire. Mr. Maitland was a native of Keith Hall, Aberdeenshire, the residence of the Earls of Kintore, where he served an apprenticeship in the gardens. Subsequently he went south, but returned in a few years to enter the service of Lord Saltoun, of Philorth, near Fraserburgh. From Philorth he went to Ness Castle, Inverness-shire, as gardener and forester; and he became head gardener at Cawdor Castle forty years ago. Mr. Maitland, who was 72 years of age, was a man of amiable character, highly esteemed by the late and present Earl of Cawdor, and greatly respected by all who knew him. He leaves a widow and grown-up family.

W. H. EVANS, OF FORDE ABBEY, CHARD.—In the death of this gentleman at Forde Abbey, on September 18, the tenantry and neighbourhood have lost one who kept up his estates with liberality, and who was an enthusiastic patron of horticulture. His tastes were likewise antiquarian, and in all the renovations which he undertook, it was his aim to blend all the old that was worth retaining with the new; and he succeeded in making Forde Abbey gardens and grounds the finest in the west of England. He was exceedingly proud of his gardens and always ready to show it and the beautiful Abbey to visitors; and one day a week during the summer the place was brown open to the public.



BOOKS: E. B. All the information you require is given in a little book issued by Messrs. Sutton & Sons, Reading, entitled *Lucas*, price 2s. 6d.

CELERY LEAVES: W. G. B. The maggots in the leaves are those of a fly (*Tephritis onopordinis*), known as the Celery leaf-miner. The fly, having laid eggs in or upon the leaf, maggots are hatched out, which afterwards feed between the upper and lower surfaces of the leaf. The transition of the little miners from the maggot stage to that of the perfect fly are rapid, and several generations are possible during one season. All you may do for your present crop is to pinch off the leaves very badly attacked. But next season you may make the leaves of your growing plants distasteful to these flies by frequently spraying them with quassia or other disagreeable liquid, and by dusting them with soot and lime. When the present crop has been removed from the ground, if you then take a few inches deep of the soil (which no doubt will contain pupæ) and burn it, you will do much towards reducing their number. Burn every bit of leaf also that you may pinch from the growing plants.

COLEUS LEAVES DISFIGURED: W. G. B. From the appearance of the leaves, we should judge the plants to have been sprayed with liquid which is injurious to them.

DIRECTORY OF NURSERYMEN IN GREAT BRITAIN, IRELAND, AND THE COLONIES: Jules Couchault & Turbat. *Horticultural Directory and Year-Book*, published at 1s., at 12, Mitre Court, Fleet Street, London, E.C.; and the *Garden Annual*, published at same price, by W. Robinson, 37, Southampton Street, Strand, London, W.C.

HERBACEOUS PERENNIAL PLANTS: *Flowers* We are unable to spare the necessary space for the enumeration of plants which flower from April to August, and would advise you to apply to a nurseryman who grows such plants largely.

HYDRANGEAS FAILING TO BLOOM: F. B. C. When these plants fail to bloom, it is usually for the reason that the wood and bloom-buds are not well ripened. Young plants (yearlings) struck from cuttings, and cut-down older plants, should be kept in cold pits till the new growths are partially matured, and then if there is still plenty of time they may be stood in sunny positions out-of-doors. Growth being matured, they may be placed in turf pits, and protected with glass in bad weather. If stood on the bottom of the pit on coal-ashes, or plunged in beds of the same, but little water need be afforded them in the winter season. Forcing should be gradually performed, and those plants with the forwardest flower-buds should be forced the earliest.

INSECTS: A. L. J. Neither of the insects you have submitted are injurious to plant-life. The fly is a species of *Ichneumon*, but was mutilated beyond further determination; it is probably a beneficial species. The other insect is the Herald-moth (*Gonoptera libatrix*).

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.—

E. F. T., Bucks. 1, Crawford; 2, not known; 3, Crassane; 4, Doctor Lactier; 5, Léon Leclerc de Laval; 6, Figue d'Alencou.—J. C. 1, Beurré Goubault; 2, Margaret.—A. C. H., Essex. The Pears and Plums were in much too advanced a condition to be determined satisfactorily. If fruits are not gathered until they are dead ripe, it may be expected that after a day or two in the post they will reach us in a half rotten state, as your's did. 1, Boddaert's Green Gage; 2, Sultan; 3, Denniston's Superb; 4, not received; 5, Beurré d'Amanlis; 6, Beurré de l'Assomption.—A. 1, Belle de Louvain; 2, Belgian Purple; 3, Autumn Compôte; 4, Diamond.—C. T., Hants. 1, Doyenné Robin; 2, Hall Door; 3, Beauty of

Kent; 4, Golden Spire.—C. T. 1, Fondante de Nees; 2, Fondante de Brest. Excellently packed. If all correspondents took as much care as you did, our work would be greatly facilitated.—E. H. C., Oxon. 1, Comte de Paris. Gather now; the fruit ripens during October and November; and it is a dessert variety, but not of the first quality; 2, Louise Bonne de Jersey. Gather at once; it is ripe during October, and it is a dessert variety.—B. H. W. 1, Smart's Prince Arthur; 2, Worcester Pearmain; 3, Brown Beurré.—T. M. We cordially echo your regret that you "could not send better specimens." 1, 2, and 5, it is impossible to determine in the condition sent, and we can only say with regard to the others that they resemble the following varieties: 3, White Paradise; 4, Keddestone Pippin; 6, Beurré d'Anjou.—E. L. Nectarine Pineapple.—H. J. Plums, Belle de Louvain, Red Magnum Bonum; Apple next week.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—Winton. The Deadly Nightshade (*Atropa Belladonna*), exceedingly poisonous.—*Diluvium*. Ambrosia aptera, a North American Composite.—*R. Jardin*. Clematis Davidiana.—W. S. S. 1, Solidago Virg-aurea; 2, Ioula Conyza; 3, Atriplex patula; 4, Lapsana communis; 5, Bromus intermedius; 6, B. unioides.—E. F., Bath. 1, Psoralea glandulosa; 2, Salvia coccinea; 3, Polygonum amplexicaule; 4, Chaenostoma hispidum.—C. W. D. Certainly not *Malvastrum coccineum*, but a species of *Sphaeralcea*, probably *Fendleri*, but material far too meagre and withered for an accurate determination to be made.—H. M. Rosa rugosa.—H. G. R. In addition to those given in our last issue. 2, Pinus excelsa; 3, Thuopsis dolabrata; 4, Pinus Cembra; 7, Taxus fastigiata; 8, Biota aurea.—A. K. D. Stapelia variegata.—H., Southampton. Miltonia Regnelli, slightly different in colour from the type.—*Ashlyns*. Chironia linoioides.—R. J., Alton. 1, Coreopsis latifolia; 2, Chrysocoma comaurea; 3, Centranthus ruber; 4, Mesembryanthemum acinaciforme.—J. D., Notts. 1, Cyathea medullaris; 2, Alsophila australis; 3, Dicksonia antarctica; 4, Osmunda regalis; 5, probably *Dracaena marginata*; 6, Pteris Ouvirardi.—R. B. 1, *Dracaena pulcherrima*; 2, *Selaginella caulescens*; 3, *Psallium thalictrofolia*; 4, *Selaginella apoda*; 5, *Selaginella denticulata*; 6, *Dracaena intermedia*; 7, *Selaginella cesia*; 8, specimen too small; 9, *Adiantum gracillimum*; 10, *Maranta picta*; 11, *Dracaena marginata*; 12, *Dracaena rubra*; 13, *Selaginella umbrosa*; 14, *Cocos Weddelliana*; 15, *Adiantum cuneatum grandiceps*; 16, *Cypripedium barbatum*; 17, *Cypripedium venustum*; 18, *Eucomis punctata*; 19, *Carex* species; 20, *Carex variegata*; 21, *Platycerium alcorni*. Specimens very imperfect, and too many sent.—W., Hampstead. 1, *Tanacetum vulgare crispum* (Tansy); 2, *Polygonum cuspidatum*.

PRESERVING FRUITS AND VEGETABLES: W. G. Any good cookery book would describe the various processes. We know of no work specially dealing with these subjects.

TOMATO FRUITS PARTLY RIPE AND GREEN: A. Derry. Kindly send some of these fruits for our inspection. We are unable to answer your question without seeing them.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Markets and Weather, see p. x.)

EXHIBITION OF BRITISH-GROWN FRUITS AT THE CRYSTAL PALACE.

(SEPTEMBER 27, 28, 29, 1900.)

THE Royal Horticultural Society is now holding its Seventh annual exhibition of British-grown fruits at the Crystal Palace. We have repeatedly expressed our conviction that much good may be done in the way of encouraging first-class fruit cultivation in this country, by bringing together such a display as that now on view, providing the public can be induced to visit the exhibition in sufficient numbers. In this respect the series of shows the Society has held at the Crystal Palace have been attended by a considerable degree of success. Though we have good reason to hope that year by year the event will be made better known, and be looked forward to by a larger number of persons, the support it has been already accorded has been such as to give cause for satisfaction. If the attendance could be still further increased, by giving the show even greater publicity, so much the better.

The present show is rather more successful generally than any which have preceded it, and though it is not more extensive, certain sections are represented very much better than last year or previously. We refer to Pears and soft fruits, as Peaches, Nectarines, and Plums, all of which we should judge are shown in twice the quantity they were at the last exhibition. In the single dish classes for Pears this is particularly evident, the entries in some of which are most satisfactory. The following are instances:—Beurré Diel, 13; Beurré Superfin, 15; Doyenné du Comice, 17; Durondeau, 18; Josephine de Malines, and Fondante d'Automne, 13 each; Louise Bonne de Jersey, 25; and in the class for "Any other variety," 36. The actual exhibits fall below these figures in some cases, but they are sufficient evidence that there has been a considerable increase.

In the classes for Plums, grown out of doors, there were 24 entries in some and never fewer than 18. The quality too was superior. Peaches and Nectarines were not only abundant, but in size and colour, they were above average.

Apples are always shown well at this exhibition, and they are not better than usual, we think, on this occasion. In the single dish classes there appears to be a little falling off in the number of exhibits of some well-known varieties, as Cox's Orange Pippin, King of the Pippins, but as there were nearly 30 entries in each of the classes there is not much to regret. What slight falling off there may be, may possibly be accounted for by particular varieties, having needed some thinning of the fruits to be done, in order to bring them to exhibition size; and in the present year when most kinds of fruits are very abundant, it has been found impossible in many gardens to effect as much thinning as was needed. Cox's Orange Pippin is such a variety, and if the trees are in the least heavily cropped, the fruits will not develop the large size in which this unrivalled Pippin is exhibited at these shows. Of newer varieties of Apples, it is interesting to note that for Lord Hindlip there was only one entry in a class reserved for that variety, and only two for Allen's Everlasting, but for Allington Pippin there were nine entries; and some specimens exhibited by J. COLMAN, Esq., Gatton Park, Reigate, in a collection of twenty-four dishes of cooking and dessert Apples, were magnificent fruits, that clearly indicate the variety to be a capital one for market as it is for quality.

Turning to essentially indoor fruits, Grapes are shown rather more largely than usual, and the quality is good. The Grape classes are remarkable for two circumstance. The first is, that Lord HAR-

RINGTON's gardener, Mr. Goodacre, has continued the wonderful success he has met with at earlier exhibitions this season, particularly at Shrewsbury, by winning the fifty-guinea Challenge Cup offered for eighteen bunches in six varieties. The second circumstance is that of Lord HASTINGS' gardener exhibiting so well in these classes. From the remarks that may be found in our description of these Grapes, we think it will be conceded that such cultivation is in the highest degree praiseworthy.

It is interesting also in connection with our note on p. 206 of the fruit crop at Barham Court, that Mr. GEO. WOODWARD entered in as many as seventy-five classes, won forty-one 1st prizes and fifteen 2nd prizes. Mr. MCKENZIE, who did well in the Apple and Pear classes last year, has been unable to exhibit on the present occasion, and we regret to hear that he is suffering indisposition. Among new exhibitors, we notice the Duke of PORTLAND, Mr. Roberts, his present gardener having entered collections of excellent Apples.

Altogether there are 155 exhibitors, and there are representatives from England, Scotland, Wales, and the Channel Islands, but none from Ireland.

The classes that several seasons ago were instituted for the purpose of illustrating the best systems of packing choice fruits were repeated, and if no superior method than has been practised hitherto was shown, they were nevertheless interesting. The District County Classes are also useful, and afford means for all exhibitors in them to compete on equal terms.

At the Luncheon, Sir TREVOR LAWRENCE was unable to be present on account of an important engagement in connection with St. Bartholomew's Hospital. The Rev. W. WILKS, M.A., occupied the Chair, and admirably fulfilled the duties pertaining to it. As Secretary to the Society, Mr. WILKS disclosed a few circumstances connected with the decision of the Royal Horticultural Society some years ago to commence this series of exhibitions, when the annual event that had previously taken place in the Crystal Palace had fallen through. Both Mr. WILKS and the Council are now happy in thinking that the decision then arrived at was one in favour of attempting to establish a show in the place of that one, and fruit-growers and horticulturists generally have reason to be grateful to the Society for continuing it.

The show necessarily inflicts a very great deal of work upon the Society's officials, especially Mr. WILKS, Mr. READER, Mr. S. T. WRIGHT, the superintendent of Chiswick, and his assistant, Mr. HUMPHREYS.

Mr. JOHN WRIGHT, V.M.H., and Mr. CHALLIS, the Earl of PEMBROKE's gardener, replied to the toasts of the referees and judges, and votes of thanks were passed to the Chairman and to Mr. WRIGHT.

Below we give a report of the whole of the competitive classes, but we must defer our remarks upon the Nurserymen's exhibits until our next issue.

DIVISION I.

(Gardeners and Amateurs only.)

FRUITS GROWN UNDER GLASS OR OTHERWISE.

COLLECTIONS OF FRUIT.

Entries were most numerous in Class II., one that calls for six dishes only. In the collections of hardy fruits there were two exhibits in each class.

The first class was one for a collection of nine dishes of ripe dessert fruits in six kinds at least, including only one each of Pine, Melon, Black and White Grapes, and not more than two varieties of any other kind, nor two dishes of the same variety. The 1st prize, which

included a Silver Cup presented by SHOLTO H. HARE, Esq., was won by the Earl of HARRINGTON, Elvaston Castle, Derby (gr., Mr. J. H. Goodacre), and it is almost needless to say that very fine quality characterised the exhibit which was well in front of the others staged. His Grapes were Black Alicante and Muscat of Alexandria, and both were excellent. There were Peaches Golden Eagle and Princess of Wales, Pear Doyenné du Comice, Apple Cox's Orange Pippin, Figs Brunswick, a moderate-sized Cayenne Pine, and a Melon. 2nd, Lady HENRY SOMERSET, Eastnor Castle, Leicestershire (gr., Mr. G. Mullens). Gros Maroc Grapes were shown in this instance in place of Black Alicante. Both these and the Muscats were of good quality. The Peaches Sea Eagle and Barrington, Nectarines Pineapple, and Albert Victor and Countess Melon were also commendable. Ribston Pippin Apples and Pitmaston Duchess Pears completed the exhibit. 3rd, Sir Jos. W. PEASE, Bt., Hutton Hall, Guisborough, Yorks (gr., Mr. J. McIndoe), whose Grapes were Gros Maroc and Foster's Seedling. There were four exhibits in the class.

The best collection of six dishes, inclusive of not fewer than four kinds (Pines excluded), was shown by J. W. FLEMING, Esq., Chilworth Manor, Romsey, Hants (gr., Mr. W. Mitchell), a new exhibitor, we think. He had excellent Madresfield Court and Muscat of Alexandria Grapes, the latter being, perhaps, a little deficient in point of finish: Peaches, Princess of Wales and Sea Eagle; Nectarine, Elruge, and Pear, Williams' Bon Chretien. The Peaches were very large in both instances. 2nd, M. BIDDLE, Esq., Ledbury, Hereford (gr., Mr. J. Davies). He had short, heavily-shouldered, capitally finished Alicante and Muscat of Alexandria Grapes, also Nectarine Albert Victor; Peaches, Princess of Wales and Barrington, and Hero of Lockinge Melon. 3rd, C. S. EADY, Esq., Otlands Lodge, Weybridge (gr., Mr. Jas. Lock). There were as many as ten exhibitors in this class.

Collections of Hardy Fruits grown entirely in the open air. Fifty dishes. The 1st prize went to Mr. R. C. SANDERS, gr. to A. C. DE ROTHSCHILD, Esq., Halton, Tring, who had eighteen dishes of Apples. Chief among them, finely finished, were Lady Sudeley, Allington Pippin, Ribston Pippin, Newton Wonder, Peasgood's Nonsuch, Mère de Menage, Emperor Alexander, The Queen, Gascoigne's Scarlet, King of the Pippins, Tom Putt; and ten dishes of Pears, chief among them being Triomphe de Vienne, Brockworth Park, Duchess d'Angoulême, Marie Benoist, Doyenné du Comice, &c. Seven dishes of Peaches, such as Dymond, Violette Hative, Grosse Mignonne, Royal George, and Early Alfred; Pitmaston Orange Nectarine, fine examples of such Plums as Magnum Bonum, Grand Duke, Monarch, Jefferson, Washington, Cox's Emperor, Coe's Golden Drop, &c. Prune Damsen, Morello Cherries, Brown Turkey Fig, and St. Joseph Strawberry. Mr. E. COLEMAN, gr. to J. L. BOYD, Esq., North Frith, Tonbridge, was 2nd; he had of Apples fine specimen of Peasgood's Nonsuch, Stones, Emperor Alexander, Cellini, Ribston and Allington Pippins, Bismarck, Bess Pool, The Queen, Blenheim Orange, &c. Of Pears, Duchess de Bordeaux, Marie Benoist, Doyenné du Comice, Triomphe de Vienne, Souvenir du Congrès, Marguerite Marillat; and of Peaches, Princess of Wales, Sea Eagle, Dymond, Gladstone, Royal George, &c.; of Plums, Grand Duke, Pond's, Coe's Golden Drop, and others, Rivers, Orange Nectarines, Quinces, Medlars, Sweet Water Grapes, Filberts and Morello Cherries.

Fruit grown partly or entirely under glass. There were two collections—12 dishes—Mr. J. McIndoe, gr. to Sir J. W. PEASE, Bt., Hutton Hall, Guisborough, who had splendid Beurré Hardy, Fondante d'Automne, Louise Bonne de Jersey, and Souvenir du Congrès Pears; of Apples, Peasgood's splendidly finished Lady Sudeley, brilliant red, and James Grieve. Peaches, Princess of Wales and Prince of Wales, Brown Turkey Figs, Bryanstone Gage and Magnum Bonum Plums. 2nd, Mr. R. POTTER, gr. to Sir M. W. COLLET, Bt., St. Clare, Kemsing, who had very fine Princess of Wales Nectarine, Lady Palmerston, and a richly-coloured Seedling Peach, Pine Apple Nectarine; Negro Largo, and an unnamed Fig; Bryanstone Gage Plums; and superb examples of Pears—Durondeau, Marguerite Marillat, Pitmaston Duchess, and Duchess d'Angoulême.

GRAPES.

The principal class was one for six distinct varieties, three bunches of each instead of two as last year.

In place of the 25-guinea Cup that last year accompanied the 1st prize, on this occasion the Challenge Cup offered was one value 50 guineas, presented by Messrs. W. WOOD & SON, of Wood-Green. The proud holder of this Challenge Cup for the coming year will be Mr. J. H. GOODACRE, the Earl of HARRINGTON's gardener, who had a very good collection. The varieties were Black Hambro, Muscat Hambro, Bar barossa (three very large heavy bunches, a little uneven in size of berry), Muscat of Alexandria, Black Alicante, and Gros Maroc. The 2nd prize, it should be particularly noted, was won by a cultivator who has to make the best of the conditions that obtain in the Metropolitan district. This was from C. BAYER, Esq., Tewkesbury Lodge, Forest Hill, London, S.E., (gr., Mr. W. Taylor). His varieties were Gros

Maroc, Chasselas Napoleon, Mrs. Pince, Lady Downes, Muscat of Alexandria, and Black Alicante. The bunches generally were somewhat small, and the Muscats required rather more colour.

Three distinct varieties were shown best by LORD HASTINGS, Melton Constable, Norfolk (gr., Mr. W. Shingles, and in this exhibit the quality was extra good. His Muscat of Alexandria were as well or better coloured than any in the Show, and Gros Colmar was exceedingly good in size and colour of berry, as was likewise Alnwick Seedling. The 2nd prize was taken by M. BIDDULPH, Esq., who showed Gros Maroc, Alicante and Muscat of Alexandria. 3rd E. S. EADY, Esq.

The variety Black Hamburg, was shown best in a class limited to this variety, by J. W. FLEMING, Esq.; Lord HILLINGDON, Hillingdon Court, Uxbridge (gr., Mr. A. R. Allan), was 2nd; and C. R. S. DICKINS, Esq., Coolhurst, Horsham (gr., Mr. A. Kemp, 3rd). There were seven exhibits, and all the fruit shown was nice and fresh in appearance for the present date of season.

Madresfield Court was only shown by two competitors, the 1st prize being gained by J. W. FLEMING, Esq., and the 2nd by C. BAYER, Esq. Those from Mr. FLEMING were very much the better fruit.

Mrs. Pince from five exhibitors was shown very well, especially by J. W. FLEMING, Esq., who won 1st prize for very large bunches of well-coloured berries. The 2nd prize was won by the Duchess of CLEVELAND, Battle Abbey, Sussex (gr., Mr. W. Camm).

Black Alicante was grandly shown by Lord HASTINGS, the best of the three bunches being (at a guess) about 8 lb. in weight, and the two remaining ones little inferior. The berries, too, were good, and colour excellent. We understand that all three bunches were cut from a Vine seven years old, that this year has ripened 71 bunches of fruit. This is something approaching a record, we should imagine. The 2nd prize lot from J. W. FLEMING, Esq., were also very good; and Lady A. TATE, Park Hill, Streatham Common (gr., Mr. W. Howe), who had third prize, also showed well. There were six exhibitors.

Lady Downes was shown by five competitors, and the best came from the London exhibitor, C. BAYER, Esq. J. W. FLEMING, Esq. was 2nd.

In the "any other Black" class there were eight exhibitors, and again Lord HASTINGS won with wondrous specimens of Alnwick seedling of exceeding weight, and from a Vine which has borne fifty-one bunches. The 2nd prize was won by excellent bunches of Gros Maroc, shown by Lord SUFFIELD, Gunton Park, Norwich (gr., Mr. W. Allan); and the 3rd by Apple Towers, from Miss RIDGE, Highfield, Englefield Green (gr., Mr. G. Lane). Cooper's Black and Muscat Hambro were also shown in this class.

Muscats of Alexandria were generally good in their class, but not of extraordinary quality or unusual finish. The best were shown by Lord HILLINGDON, the Earl of HARRINGTON, and WALPOLE GREENWELL, Esq., Marden Park (gr., Mr. W. Lintott), following in this order. There were nine collections.

Mrs. Pearson was given a class to itself, but the only exhibit was one from Lord HASTINGS, who had very commendable bunches.

"Any other White" was best in the variety Chasselas Napoleon, large, clean bunches being shown by C. BAYER, Esq.; the same variety from Miss RIDGE gained 2nd prize; and fine specimens of Buckland Sweetwater from H. A. ATTENBOROUGH, Esq., Catesby House, Daventry (gr., Mr. A. Child), were 3rd.

PEACHES AND NECTARINES.

In the single-dish class there were thirteen dishes, late varieties, of course, being prominent. The 1st prize was awarded to Mr. W. MITCHELL, gr. to J. W. FLEMING, Esq., Chilworth Manor, Romsey, who had a very fine and even sample of Sea Eagle; and Mr. J. A. ROGERS, gr. to J. B. FORTESCUE, Esq., Drophmore, Maidenhead, was 2nd with very fine Noblesse; Lady Palmerston and Barrington were also very good.

The best single dish from under glass came from Mr. S. MULLENS, gr. to Lady HENRY SOMERSET, Eastnor Castle, Ledbury, who had Albert Victor, very fine. Mr. F. W. THOMAS, Wannock, Polegate, came 2nd, with finely-coloured Spenser; Pine-apple and Victoria were also shown in good condition.

PLUMS.

Three dishes of dessert Plums or Gages from under glass came best from Mr. J. HUDSON, gr. to LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton, who had splendidly-finished examples of Coe's Violet, Reine Claude de Bavay, and Golden Transparent Gage; Mr. J. H. GOODACRE, gr. to the Earl of HARRINGTON, Elvaston Castle, Derby, was 2nd with Jefferson, Coe's Golden Drop, and Bryanston Gage, but not one of the varieties was named. This should be made a cause of disqualification.

DIVISION III.

MARKET-GROWERS' CLASSES.

Grapes had in this section three classes, to be shown in baskets. First came one for a single layer of bunches of Black Hamburg in a basket set in a flat, weighing not less than 12 lb. Mr. IGGULDEN, Frome, Somerset, was here 1st with well-packed samples, but these lacked finish; Mr. W. POUPART, Twickenham, who was 2nd, had less smartness, and the stems were not secured to the basket.

In the class for white Grapes, Messrs. W. J. & J. C. BATHO, Finchley, sent grand Canon Hall Muscat, and were an easy 1st; Mr. IGGULDEN coming 2nd with Muscat of Alexandria, very good samples.

With other package than baby-baskets, cross-handled ones being most sent. Mr. J. GORE of Polegate, Sussex, was 1st with grand bunches of Gros Colmar; Mr. W. GRINN, Haroldswood, Sussex, coming 2nd, with Muscat of Alexandria. The competition in each case did not exceed five lots.

Apples brought stronger competition. The class for four varieties, in baskets or boxes of 42 lb. each, was productive of remarkably fine fruits from Mr. POUPART, in rounds, papered at the sides. His varieties included Bismarck, Warner's King, Peasgood's Nonsuch, and Prince Albert; Mr. G. TEBBUTT, Isleworth, was 2nd with similar baskets not quite so high packed as the preceding, having Stirling Castle, Wellington, &c., good. There was in this class a superb lot of fruits in flats, packed on their sides in wood-wool, but the card had disappeared. Possibly they were too heavy; still, the samples were superb.

In an analogous class for dessert Apples of but 20 lb. in each basket, Mr. POUPART was again 1st, having good Rosemary Russet, Ribston Pippin, Cox's Orange, and King of the Pippins. Mr. A. WYATT, Bedford, Middlesex, was 2nd, with Kings, Ingrestre, Nonsuch, and Worcesters. Some other baskets lacked neatness in the packing.

With two varieties of cooking Apples, each lot 20 lb. in weight, Mr. E. BASHAM, of Bassaleg, Monmouth, was 1st, with very fine Bismarcks and Queens, in flats, and wood-wool packing. Mr. TEBBUTT was 2nd, with rounds, having of varieties Lady Henniker and Stirling Castle.

With a similar class for dessert Apples, Messrs. CAMPBELL & GETTING, Ross, Hereford, were 1st, having very fine Ribstons and Cox's Orange Pippins in wood-wool, in flats, very perfectly packed. Mr. POUPART was 2nd. In both cases the fruits were rather too high packed for long transit.

With one basket of cooking Apples, Messrs. CAMPBELL & GETTING were 1st with fine Peasgood's Nonsuch in a flat; Mr. A. G. ANCOCK, Ipswich, coming 2nd with the same variety in a flat, but wanting some soft packing.

With a similar class for 20 lb. of any dessert variety, Mr. POUPART was 1st, with fine Cox's Orange in a round; Mr. WYATT being 2nd with the same variety.

A fine sample of Gascoigne's Scarlet from Mr. BASHAM, in a flat, was far too large for dessert purposes.

In classes for 42 lb. of Apples, first, to show improved form of package for market, and second, any proved system of packing, Mr. BASHAM was in the one class the only exhibitor, having fine Ecklinville Seedling, packed in wood-wool in a flat as previously seen; and a similar basket of Peasgood's with exactly the same form of packing as in the other. Surely it is difficult to term this evidently common form of packing fruit for market or other purposes as being improved. In the latter class, Mr. POUPART put up his fruit in an ordinary round, using partitions of paper.

The classes for Pears showed nothing of an advance in packing. In the class for two varieties in packages, Mr. A. WYATT was 1st; and Mr. POUPART, 2nd; the former having Pitmaston Duchess, and Souvenir du Congrès; and both used rounds.

In a class for twenty-four to forty-eight fruits of one variety in a package, Mr. POUPART was 1st with one layer of fine Louise Bonne in a flat box. In the mixed class for twelve of Apples and six of Pears in variety, laid on a table, Mr. POUPART was again 1st; his fruits being displayed on blue paper, and leaves in diamond form. The finest Apples were Peasgood's Nonsuch, Lord Derby, Alfriston, and Warner's King; and of dessert, Cox's Orange, Ribston Pippins, and Wealthy; and of Pears, Pitmaston Duchess, Beurré Superfin, Conference, Doyenné du Comice, and Louise Bonne. Mr. W. J. LORJOIT, Isleworth, was 2nd, having also some fine samples.

Cooking Plums in a basket or box, about 28 lb., brought both Mr. POUPART and Mr. WYATT to the front again in this order named, both having fine samples of Monarch. Of dessert Plums, Mr. J. GORE had the best, with Jefferson, in a shallow box, the fruits half packed in paper; Mr. IGGULDEN was 2nd, with same variety.

With twenty-four Peaches in a box, Mr. GORE was again 1st. In this case superiority of packing was to have consideration. Mr. GORE had his fruits in paper, white wool, and wood-wool. Mr. POUPART and Mr. JONES, Cheshunt, were equal 2nd, the former having paper and white wool only, whilst the latter had his fine fruits in wood-wool only.

There were eight baskets or boxes of Tomatos in competition, the most favoured packing evidently being that of a paper-lined, cross-handled basket. Large fruits did not find favour. Mr. CHARLES MOORE, of Surbiton, Surrey, was 1st; and Mr. POUPART 2nd. Some of the samples needed more careful grading.

DIVISION IV.

FRUITS GROWN IN THE OPEN AIR.

APPLES.

There were five collections of twenty-four dishes, sixteen culinary, eight dessert. Here Mr. GEO. WOODWARD was 1st with a magnificent exhibit of culinary varieties; there were New Hawthornden, Yorkshire Beauty, Lord Suffield, Belle Dubois, Peasgood's Nonsuch, Belle Pontoise, Stone's, Mère de Ménage, Emperor Alexander, with wonderfulexamples; Golden Noble, Warner's King, Bismarck, Taylor's Kernel, Grenadier, Wilshire Defiance, and The Queen. Of dessert varieties, Mabbot's Pearmain, American Mother, Worcester Pearmain, Calville Précoce, Ribston Pippin, Cox's Orange Pippin (very fine), Washington and Wealthy. In the exhibit of Mr. W. E. HUMPHREYS, gr. to A. H. SMEE, Esq., The Grange, Hackbridge, who was 2nd, there were very fine examples of Bramley's Seedling, Gascoigne's Scarlet, Warner's King, Peasgood's Nonsuch, Mère de Ménage, Emperor Alexander,

Lord Derby, Royal Jubilee, Hereford Costard, Bismarck, Lady Henniker, &c.; and of dessert, Cox's Orange Pippin, Ribston Pippin, Allington Pippin, Manning Pearmain, Washington, Wealthy, &c.; 3rd, Mr. S. DEADMAN, S. E. A. College, Wye.

There were four entries of twelve dishes, eight culinary and four dessert. Mr. R. POTTER, St. Clere Gardens, Kensing, was 1st with very fine fruits of Peasgood's Nonsuch, Gloria Mundi, Warner's King, Withington Fillbasket, The Queen, Mère de Ménage, Lady Henniker, and Emperor Alexander. Of dessert varieties there were Wealthy, Gascoigne's Scarlet Seedling, Fearn's Pippin (very fine), and Ribston Pippin. Mr. A. MAXIM, gr. to Colonel HORACE WALPOLE, Heckfield Place, Winchester, was 2nd, with a collection only just inferior to the foregoing. Of culinary Apples he had very fine examples of Peasgood's Nonsuch, Pott's Seedling, Cox's Pomona, Warner's King, Bramley's Seedling, Lane's Prince Albert, and one unnamed; of dessert, Cox's Orange Pippin, American Mother, Ribston Pippin, and Gascoigne's Scarlet. Mr. C. EARL, Somerhill Gardens, Tonbridge, was 3rd.

Of nine dishes, six cooking and three dessert, there were five collections. Mr. S. OSBORN, East Sheen Lodge, was again 1st; he had Pott's Seedling, Bismarck, Peasgood Nonsuch, Newton Wonder, Warner's King, and Grand Duke Constantine, the last two very fine; and of dessert, American Mother, Baumann's Red Reineette, and Worcester Pearmain. Mr. J. DAWES, gr. to M. BIDDULPH, Esq., Ledbury, Hereford, was 2nd. This collection was unnamed; the leading sorts, Peasgood's Nonsuch, Ecklinville, Lord Suffield, were very fine; Warner's King, Taylor's Kernel, and Stirling Castle; and of dessert varieties, there were Ribston Pippin, Worcester Pearmain, and Cox's Orange Pippin. 3rd, Mr. J. JONES, gr. to J. R. BROUGHAM, Esq., Wallington Bridge, Carshalton.

In the class for six dishes of cooking Apples, Mr. G. WOODWARD was 1st out of five competitors, having splendid fruits of Belle Dubois, Peasgood's Nonsuch, Warner's King, Emperor Alexander, Stone's and Mère de Ménage, all noble examples; 2nd, H. HORNAND, Esq., Gurney's Manor, Hingham, Norfolk, who had very fine Warner's King, New Hawthornden, Emperor Alexander, Peasgood's Nonsuch, Hollandbury and Lane's Prince Albert; a 3rd prize was awarded to Mr. R. M. WHITING, Crendon Hill, Hereford.

DESSERT APPLES.

There were six entries of six dishes. Mr. G. WOODWARD was again 1st with wonderful fruits of Wealthy, Washington, Cox's Orange and Ribston Pippins, Scarlet Pearmain, and Mother; Mr. T. NEALE, gr. to C. J. STARTUP, Esq., West Farleigh, Maidstone, was 2nd; he had very fine Egremont Russet, Wealthy, Ribston and Cox's Orange Pippin, Baumann's Winter Reineette and Worcester Pearmain. There were twelve collections of three dishes, and Mr. C. ROSS, gr. to Captain CARSTAIRS, Welford Park, Newbury, was 1st with Allington Pippin, Rival, and Christmas Pearmain, all superbly fine. Mr. W. H. GODDEN, gr. to F. W. BUXTON, Esq., Pishiobury, Sawbridgeworth, was 2nd; here were well-developed fruits of Ribston, Cox's Orange, and Blenheim Pippins.

PEARS.

There were six collections of eighteen dishes of dessert Pears, and here again Mr. G. WOODWARD asserted his superiority, having very fine examples of Beurré Superfin, Durondeau, Pitmaston Duchess, Marguerite Marillat, Doyenné du Comice, Duchess d'Angoulême, Beurre Diel, Baitet Père, Beurré Hardy, Mme. Trevey, Colombia, Gen. Todtleben, Doyenné Boussoch, Marie Benoist, Magnate, Emile d'Heyst, Beurré Alexander, Lucas and Brown Beurré. 2nd, Mr. W. BACON, gr. to Sir MARCUS SAMUEL, Mote Park, Maidstone, who also had very fine fruit of Marguerite Marillat, Pitmaston Duchess, Triomphe de Vienne, Fondante de Cuerné, Souvenir du Congrès, Marie Louise d'Uccle, Fondante de Thirriott, Doyenné du Comice, Doyenné Boussoch, Beurré Superfin, Marie Benoist, Beurré Jean Van Geert, Directeur Hardy, Marie Louise, Durondeau, &c.

With twelve dishes, Mr. S. OSBORN, East Sheen Lodge, was 1st; he had very fine Pitmaston Duchess, finely coloured; Beurré Bachelier, Brockworth Park, Duchesse d'Angoulême, Doyenné Boussoch, Beurré Hardy, Souvenir du Congrès, Beurre Diel, Madame Trevey, Durondeau, Louise Bonne of Jersey, and Marie Louise; 2nd, Mr. A. MAXIM, Heckfield Gardens, who had very good fruit indeed, but lacking colour; in his collection were Pitmaston Duchess, St. Michael Archangel, Doyenné du Comice, Brockworth Park, Hacon's Incomparable, Beurré Superfin, Beurré Hardy, Marie Louise, Nouvelle Fulvie, &c.

There were three competitors with nine dishes of Pears; and here Mr. W. JONES, Wallington Bridge, Carshalton, was 1st. He had excellent fruit of Beurré Bachelier, Souvenir du Congrès, Pitmaston Duchess, Conseiller de la Cour, Marie Louise d'Uccle, Easter Beurré, Louise Bonne of Jersey, Beurré Superfin, and Urbanist. 2nd, Mr. J. W. BARKS, gr. to H. PORTBRIDGE, Esq., Castle Hill, Bletchingley, who was very close with Duchesse d'Angoulême, Pitmaston Duchess, Doyenné du Comice, Conference, Beurré d'Amanlis, Thompson, Bon Chrétien, Beurré Superfin, and Beurré Diel.

There were eight collections of six dishes, and here Mr. G. H. SAGE, gr. to the Marquis CAMDEN, Bayham Abbey, Lambethurst, was 1st with fine even examples of Pitmaston Duchess, Souvenir du Congrès, Beurré Bachelier, Brockworth Park, Gansell's Bergamot, and one unnamed; 2nd, Mr. J. WEBB, gr. to H. PADWICK, Esq., Manor House, Horsham, who had very good fruit of Easter Beurré, Pitmaston Duchess, Beurré Superfin, Marie Louise d'Uccle, Beurré d'Amanlis, and Doyenné du Comice.

There were eight collections of three dishes; Mr. J. RICH, gr. to G. H. HADFIELD, Esq., Moraston House, Ross, was 1st

with superior fruits of Pitmaston Duchess, Souvenir du Congrès, and Doyenne Boussoch; 2nd, Mr. G. Grigg, gr. to the Earl of Ashburnham, Ashburnham Place, Battle, who had only just inferior Doyenne du Comice, Bon Chretien, and Brockworth Park.

There were four collections of three dishes of stewing Pears: Mr. R. POTTER, St. Clere, Kempsing, was 1st, with Triomphe de Jodgeine, Uvedale's St. Germain, and Vicar of Winkfield.

PEACHES.

Fourteen competitors entered in this class, and the fruit was generally of good quality and finely coloured. Mr. G. WOODWARD, gr. to Barham Court, was 1st, with well-finished fruit of Sea Eagle, the Nectarine Peach, and Princess of Wales; Mr. A. MAXIM, Heckfield Place, was 2nd, with Gladstone, Sea Eagle, and the Nectarine Peach. There were also other excellent examples of out-door culture.

There were nineteen single dishes, the 1st prize going to Mr. H. MITCHELL, The Gardens, Chilworth Manor, with fairly finished fruits of Walburton Admirable; Mr. C. SUTTON, Chevening Park, Sevenoaks, was 2nd, with excellent fruit of Condor. In this class also the fruit was characterised by fine colour.

NECTARINES.

Four collections of three dishes competed, Mr. G. WOODWARD again taking the 1st prize with superb fruit of Rivers' Orange; Humboldt and Fine Apple all finely coloured. Mr. Chas. Earl, gr. to D. E. D'AVIGDOL GOLD-SMITH, Esq., of Somerhill, Tonbridge, was 2nd with Byron, Darwin and Prince of Wales, rather smaller but brilliantly coloured. There were eleven single dishes, all generally good. Mr. A. Child, gr. to H. A. ATTENBOROUGH, Esq., Catesby House, Daventry, was 1st with very good fruit of Pine Apple. Mr. J. Spokes, gr. to R. BEDDINGFIELD, Esq., Grove House, Roehampton, was 2nd with well-finished fruit of Humboldt.

PLUMS.

There were at least a dozen collections of four dishes of distinct varieties grown in the open air, and the 1st prize was taken by Mr. J. Vert, gr. to Lord BRAYBROOKE, Audley End, Saffron Walden, who had very fine, even, well-coloured fruits of Cox's Golden Drop, Rivers' late Orange, Cox's Violet and Jefferson. Mr. J. H. GOODACRE, Elvaston Gardens, was 2nd.

There was a large number of single dishes, and the 1st prize went to Mr. W. SEAMORE, gr. to GEO. TAYLOR, Esq., Margery Hall, Reigate, for Cox's Golden Drop; Mr. T. TURTON, gr. to J. K. D. W. DIGBY, Esq., Sherborne Castle, was 2nd with the same variety. Jefferson and Golden Drop were mainly shown in this class.

The best dish of Gage Plums: Mr. R. Chamberlain, gr. to F. M. LONAGAN, Esq., Cressingham Park, Reading, was 1st with Transparent Gage, very fine; Mr. A. MAXIM, Heckfield, was 2nd with the same.

There were nearly a score of collections of cooking Plums. Mr. W. POPE, gr. to the Earl of CARNARVON, Highclere, Newbury, was 1st with very fine fruits of White Magnum Bonum, Pond's Seedling, Monarch, and Grand Duke; Mr. G. GREIG, Ashburnham Place, was 2nd with Magnum Bonum (white), Pond's Seedling, Kentish Black Diamond, and Grand Duke. The 1st prize, single dish, was Pond's Seedling, from Mr. MAXIM; Mr. TURTON, Sherborne Castle Gardens, was 2nd with very fine Pond's, carrying a rich bloom, which was lacking in the 1st prize dish, while they were much more even.

DIVISION V.

SPECIAL DISTRICT COUNTY PRIZES.

In each of the following classes, in which counties having similar climatic conditions are grouped together, there were two competitions, one of which was for six dishes of Apples distinct, four cooking and two dessert varieties; and the other for six dishes of Pears distinct.

KENT.

Apples.—1st, Mr. W. T. STOWERS, gr. to G. H. DEAN, Esq., Sittingbourne, Kent, who had magnificent Pearsgood's Nonsuch, Emperor Alexander, Warner's King, Lane's Prince Albert, Worcester Pearmain, and Cox's Orange Pippin; 2nd, Mr. S. DEADMAN, Wye, who had Pearsgood's Nonsuch, Warner's King, New Hawthornden, Stirling Castle, King of the Pippins, and Cox's Orange Pippin.

Pears.—1st, Mr. W. T. STOWERS, with very fine Marguerit, Marillat, Pitmaston Duchess, Doyenne Boussoch, Beurré Hardy, Doyenne du Comice, and Louise Bonne of Jersey; 2nd, Mr. E. COLMAN, gr. to T. L. BOYD, Esq., North Frith, who had Triomphe de Vienne, Pitmaston Duchess, Beurré Bachelier, Souvenir du Congrès, Beurré Mortillet, and Marie Benoist.

OPEN ONLY TO GROWERS IN SURREY, SUSSEX, HANTS, DORSET, SOMERSET, DEVON, AND CORNWALL.

Apples.—1st, Mr. T. TURTON, Sherborne Castle, with grand fruit of Pearsgood's Nonsuch, Mère de Ménage, Hollandbury, Warner's King, Cox's Orange and Ribston Pippin; 2nd, Mr. G. CRIGO, Ashburnham Place, with scarcely inferior samples of Warner's King, Pearsgood's Nonsuch, Bismarck, Ecklinville Seedling, Ribston, and Cox's Orange Pippin.

Pears.—1st, Mr. F. W. THOMAS, Polegate, with Pitmaston Duchess, Souvenir du Congrès, Marguerite Marillat, Beurré Superfin, and Doyenne Boussoch; 2nd, Mr. G. CRIGO, with Marie Louise d'Ucle, Beurré Diel, Clapp's Favourite, Bon Chretien, Doyenne du Comice, and Pitmaston Duchess, in both cases the fruit very fine.

OPEN TO WILTS, GLOUCESTER, OXFORD, BUCKS, BERKS, BEDS, HERTS, AND MIDDLESEX.

Apples.—1st, Mr. W. DAVIES, gr. to A. W. G. WRIGHT, Esq., Quarry Farm, Newent, Glos., who had very fine fruit of

Pearsgood's Nonsuch, A. F. Barron, Pott's Seedling, Warner's King, Worcester Pearmain, and Ribston Pippin. 2nd, Mr. R. C. SANDERS, Halton Gardens, with Warner's King, Pearsgood's Nonsuch, Emperor Alexander, The Queen, Lady Sudeley, and Allington Pippin.

Pears.—1st, Mr. W. H. BARNISTER, gr. to H. ST. VINCENT AMES, Esq., Cote House, Westbury-on-Trym, with finely-finished fruit of Triomphe de Vienne, Souvenir du Congrès, Bon Chretien, Doyenne Boussoch, Beurré Hardy, and Durondeau. 2nd, Mr. A. R. ALLAN, gr. to Lord HILLINGDON, Hillingdon Court, Uxbridge, who had good fruit of Triomphe de Vienne, Brockworth Park, Doyenne du Comice, Fondante d'Automne, Thompsons, and Louise Bonne of Jersey.

OPEN TO GROWERS IN ESSEX, SUFFOLK, NORFOLK, CAMBRIDGE, HUNTS AND RUTLAND.

Apples.—1st, H. H. HURNARD, Hingham, Norfolk. Pearsgood's Nonsuch, Warner's King, Lord Derby, Pott's Seedling, Cox's Orange Pippin, and King of the Pippins.

Pears.—1st, Mr. W. ALLAN, gr. to Lord SUFFIELD, Gunton Park, Norwich. Beurré Baltet, Pitmaston, Duchess Durondeau, Doyenne Boussoch, Emile d'Heyst, Marie Louise. 2nd, Mr. W. HARRISON, gr. to Col. HOURLON, Hillingbury Place, Bishops Stortford, with much the same varieties.

OPEN ONLY TO GROWERS IN LINCOLN, NORTHAMPTON, WARWICK, LEICESTER, NOTTS, DERBY, STAFFS, SHROPSHIRE, AND CHESHIRE.

Apples.—1st, Mr. W. H. DIVERS, gr. to the Duke of RUTLAND, Belvoir Castle, Grantham, with Lady Henniker, Warner's King, The Queen, Pearsgood's Nonsuch, Edmund's Pippin, and Duchess Favourite. 2nd, Mr. J. NAYLOR, gr. to H. KNOTT, Esq., Stamford, with Warner's King, Pearsgood's Nonsuch, Emperor Alexander, Lord Suffolk, Worcester Pearmain, and Cox's Orange Pippin.

Pears.—1st, Mr. J. ROBERTS, gr. to the Duke of PORTLAND, Welbeck Abbey, Notts, with Marie Benoist, Pitmaston Duchess, Souvenir du Congrès, General Tottleben, Durondeau, and Doyenne du Comice. 2nd, Mr. W. H. DIVERS, Belvoir Castle Gardens, with Brockworth Park, General Tottleben, Beurré d'Anjou, Beurré Duc Van Mons, Léon Leclerc. Mr. J. H. GOODACRE was awarded a 1st prize in this class, but a protest was entered on the ground that the fruit had not been grown in the open air, and up held.

OPEN ONLY TO GROWERS IN WORCESTER, HEREFORD, MONMOUTH, GLAMORGAN, CARMARTHEN, AND PEMBROKE.

Apples.—1st, Mr. J. RICH, Morastown House Gardens, Ross. Gigantic examples of Lord Derby, Pearsgood's Nonsuch; Bramley's Seedling, Warner's King, highly finished Cox's Orange Pippin, and Worcester Pearmain; 2nd, Mr. R. M. WHITING, with very fine Pearsgood's Nonsuch, Stirling Castle, Emperor Alexander, Bismarck, Cox's Orange Pippin, and Worcester Pearmain.

Pears.—1st, Mr. J. RICH, with extremely fine fruits of Souvenir du Congrès, Pitmaston, Duchess, Beurré Hardy, Beauty of Guernsey, Marie Louise, and Doyenne du Comice. One collection only was staged.

OPEN ONLY TO GROWERS IN THE OTHER COUNTIES OF WALES.

Apples.—1st, Mr. R. D. HUGHES, Middle Lane, Denbigh, with Northern Greening, Warner's King, Norfolk Beefing, Blenheim Orange, and dessert Ribston Pippin, and Dutch Mignonne. No 2nd prize was awarded. Another collection was staged from Aberystwith, but the fruit was small, uneven, and lacked quality.

Pears.—1st, Mr. S. J. SQUIBBS, gr. to Lady W. WYNN, Llangedwyn, Oswestry, with good fruit of Brockworth Park, Pitmaston Duchess, Beurré Diel, Marie Louise, Doyenne du Comice, and Flemish Beauty. One collection only was staged.

OPEN ONLY TO GROWERS IN THE SIX NORTHERN COUNTIES OF ENGLAND, AND THE ISLE OF MAN.

Apples.—1st, Mr. JAS. GARSIDE, Larbeck Gardens, Great Eccleston, Lancashire, who had what appeared to be excellent fruit for the locality, of Grenadier, Warner's King, Annie Elizabeth, one unnamed, and two dessert varieties, viz., Orange Pippin, a light yellow fruit, and Worcester Pearmain.

OPEN TO GROWERS IN SCOTLAND.

Apples.—1st, Mr. Jas. Day, gr. to Earl of GALLOWAY, Galloway House, Carlisle, with good fruit of Pearsgood's Nonsuch, Warner's King, Stones, The Queen, Worcester Pearmain, and James Grieve; 2nd, Mr. Jas. Cairns, gr. to The Earl HOWE; The Hersel, Coldstream, N.B., with Ecklinville, Gloria Mundi, Warner's King, Prince Albert, Worcester Pearmain, and Baumann's Red Winter Reinette.

Pears.—1st, Mr. JAMES DAY, Galloway, with excellent Pitmaston Duchess, Madame Treyre, Jersey Gratioli, Louise Bonne of Jersey, Souvenir du Congrès, and Bonne Chretien. 2nd, Mr. JOHN CAIRNS, Coldstream, who had good samples of Durondeau, Beurré d'Amanlis, Doyenne du Comice, Beurré Bachelier, Bon Chretien, and Doyenne Boussoch.

DIVISION VI.

(Open to Gardeners and Amateurs only.)

SINGLE DISHES OF FRUIT GROWN IN THE OPEN AIR.

COOKING APPLES.

The competition in the majority of these classes was scarcely as keen as might have been expected, and the quality and size generally was rather below that of some of the preceding shows.

Class 108, the first in this division, started with Alfriston, five competing. Mr. WOODWARD, gr. to ROGER LEIGH, Esq., was 1st with a fine dish of clean fruits; 2nd, Mr. A. SMITH, gr. to the LADY SUPERIOR, The Convent, Roehampton.

In the two succeeding classes, that of Beauty of Kent, and Belle de Pontoise, three competed, Mr. WOODWARD coming 1st in each with handsome samples.

Of Bismarck there was a larger entry, eleven dishes being staged. 1st, Mr. WOODWARD with highly coloured samples; 2nd Mr. SMITH.

Strange to say the class for Blenheim Orange (large fruits) brought but two entries, 1st, Mr. Neale, gr. to C. J. STARTUP, Esq., West Farleigh, Maidstone; 2nd, Mr. W. H. GODDEN, gr. to F. BUXTON, Esq., Sawbridgeworth.

Bramley's Seedling, in which three prizes were offered by Messrs. MERRYWEATHER, brought but six even dishes, 1st, Mr. WHITING, Credenhill, Hereford; 2nd, Mr. WOODWARD. Cellini, class 114, eight exhibitors staged, but several of the dishes were very poor. A large and highly-coloured dish from Mr. SLADE, gr. to Lord POLTIMORE, Poltimore Park, Exeter, was easily 1st; 2nd, Mr. RIDDEN, gr. to G. W. BIRD, Esq., Manor House, West Wickham, Kent.

In Class 115, Cox's Pomona, the competition, was stronger, thirteen dishes being staged. Mr. STOWERS, gr. to G. H. DEAN, Esq., Sittingbourne, was 1st with large but not nicely-coloured examples; 2nd, Mr. MAXIM, gr. to Colonel HORACE WALPOLE, Heckfield Place, Winchfield.

Class 116, Dumelow's Seedling, found ten competitors, but excepting the two best dishes from Mr. SMITH and Mr. GRIGG, gr. to Earl ASHBURNHAM, Battle, the samples were rather poor.

In Class 117, that for Emperor Alexander, Mr. WOODWARD contributed a magnificent 1st prize dish; 2nd, Mr. STOWERS. Nine lots were staged.

Ten exhibitors staged Gascoigne's Scarlet: 1st, Mr. STOWERS; 2nd, Mr. CORNELIUS, gr. to H. H. WILLIAMS, Esq., Pencalenick, Truro, both large samples, but not highly coloured.

In the following class—that of Golden Noble, the same number of competitors competed: 1st, Mr. POTTER, gr. to Sir M. W. COLLET, Bart., St. Clere, Kensing, Sevenoaks, with beautifully-coloured and large fruits; 2nd, Mr. WOODWARD.

Golden Spire was poorly represented by three exhibitors, Mr. WOODWARD's 1st prize dish being much the best. This exhibitor also staged the best among five competitors in the next class, Grenadier; 2nd, Mr. DAVIES, gr. to A. W. WRIGHT, Esq., Quarry House, Newent, Gloucester.

Class 122, Hornead Pearmain, brought five competitors, in which Mr. WHITING was 1st; 2nd, Mr. J. RICH, gr. to G. H. HADFIELD, Esq., Normanton House, Ross.

Eleven good dishes of Lane's Prince Albert were set up: 1st, Mr. ROSS, gr. to Captain CARSTAIRS, Welford Park, Newbury; 2nd, Mr. STOWER. Mr. ROSS' examples were fine and highly coloured.

Mr. STOWER was 1st for Lord Derby, followed closely by Mr. WOODWARD, twelve competed. Lord SUFFIELD was staged by ten exhibitors, Mr. WOODWARD coming 1st with magnificent fruits; 2nd, Mr. STOWER. The same exhibitors were also similarly placed in the next class, that of Mère de Ménage, Mr. WOODWARD's dish being remarkably fine—six competed. Northern exhibitors contributed but two dishes of Newton Wonder, while those from Southern Counties staged twelve, the prizes in the two classes being given by Messrs. Pearson & Sons. In the latter Mr. THOMAS WANNOCK, Polegate, was 1st with handsomely-coloured fruits; 2nd, Mr. HUDSON, gr. to LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton, with larger fruits.

Some remarkable samples of Pearsgood's Nonsuch were staged, ten competing. Mr. WOODWARD 1st (very fine); 2nd Mr. STOWERS.

Class 129, Pott's Seedling, eight dishes, 1st Mr. DAVIES; 2nd Mr. WOODWARD.

Royal Jubilee, 1st Mr. C. ROSS, five competing. Sandringham brought six good dishes, 1st Mr. SMITH; 2nd Mr. WOODWARD.

The same number of exhibitors staged Stirling Castle, 1st, Mr. WOODWARD; 2nd, Mr. WHITING, with excellent samples. Mr. WOODWARD was also 1st in the succeeding class with a fine dish of Stone's, four competing.

The Queen was staged in good form by thirteen exhibitors, among them some highly-coloured examples. Mr. WOODWARD was 1st; Mr. SANDERS, gr. to ALFRED DE ROTHSCHILD, Esq., Halton, Triag, 2nd.

Mr. WOODWARD was again 1st with Tower of Glamis, very fine; 2nd, Mr. SUTTON, gr. to Earl STANHOPE, Chevening Park, Sevenoaks—seven competing.

Mr. WOODWARD was 1st for Twenty-ounce, the only dish staged; and also for Waltham Abbey Seedling; 2nd, Mr. CLINCH, Sittingbourne, four exhibitors competing with the latter variety.

DESSERT APPLES.

SINGLE DISHES OF FRUIT GROWN IN THE OPEN AIR.

Adams' Pearmain, a good standard variety, was represented by seven dishes, Mr. WOODWARD having the best; Mr. CORNELIUS, gr. to H. H. WILLIAMS, Esq., Truro, coming 2nd.

Allen's Everlasting was seen in one dish only, a poor sample. If Mr. WOODWARD can only find such poor things, what a worthless variety must it be. On the other hand, Allington Pippin was seen in nine dishes, generally in fine form, some almost too large: it is a very handsome variety. Mr. J. G. PERKINS, gr. to L. H. PAGE, Esq., Sittingbourne, was 1st; Mr. C. ROSS, gr. to Capt. CARSTAIRS, Newbury, being 2nd.

The famous Blenheim Pippin, the fruits not to exceed 3 inches in diameter, was represented by eighteen plates, generally of a nice, useful size; Mr. W. Davies, gr. to A. W. J. WRIGHT, Esq., Newent, Gloucestershire, being 1st; and Mr. T. Neale, gr. to C. J. STARTUP, Esq., Maidstone, being 2nd.

Only four lots of Braddick's Nonpareil were sent; Mr. Treadwell, gr. to Surgeon-General C. PLANCH, Edenbridge, having the best; Mr. Woodward coming 2nd. There were six lots of Brownlee's Russet; Mr. Colman, gr. to T. L. BOYD, Esq., Tonbridge, having the best. Claygate Pearmain gave an indifferent sample in six dishes. Mr. Woodward being 1st; and Mr. H. Ridden, gr. to C. W. BIRD, Esq., West Wickham, came 2nd.

There were but two dishes of the good old Cackle Pippin, very fine samples coming from Mr. A. J. CARTER, Billingham, Sussex. The other dish was a poor sample. That famous Apple Cox's Orange Pippin brought twenty dishes, the samples generally being fair, but not up to last year's excellence. Here Mr. Woodward was again 1st, with good coloured samples. Mr. Bound, gr. to J. J. COLMAN, Esq., Gatton Park, Redhill, coming 2nd, also with nice fruits.

The Duke of Devonshire put in a fairly respectable appearance with fine dishes, the best coming from Mr. W. Jones, gr. to J. M. BROUGHTON, Esq., Carshalton. Mr. Chamberlain, gr. to F. M. LONERGAN, Esq., Reading, being 2nd. There was but one fruit, and a poor sample, of Darcy Spice; and but three dishes of Egremont Russet, a handsome sample from Mr. WHITING, of Hereford, being well 1st. Fearn's Pippin was well shown with eleven dishes, some of great beauty. Mr. Stowers, gr. to C. H. DEAN, Esq., Sittingbourne, had beautiful samples; Mr. Bannister, gr. to H. W. VINCENT ANES, Esq., Westbury-on-Trym, coming 2nd. Gascoigne's Scarlet Apple brought down to the 3-inch test, carried superb colour generally. Mr. STOWERS was well 1st with very bright fruits. Mr. CLINCH, also of Sittingbourne, coming 2nd.

Golden Reinette brought but three lots, the best, a fairly good sample, coming from Mr. JONES; Mr. W. Farr, gr. to A. PEASE, Esq., Isleworth, being 2nd. There were but two dishes of Gravenstein, the best coming from Mr. A. MAXIM, Heckfield Gardens, the fruit being richly coloured. The other dish also good, coming from Mr. Humphreys, gr. to A. H. SMEE, Esq., Carshalton. It was to be regretted that of the fine fruits sent up by Mr. JAS. DAY, of Galloway House Gardens, Scotland, in this class, much the best sample of James Grieve should have been set aside because one fruit through imperfect packing had become bruised. As it was, Mr. ROSS was placed 1st with very nice fruits.

Thirteen dishes represented the well-known King of the Pippins, Mr. C. W. Baynes, gr. to Mrs. W. SCOTT, Weybridge, having the best good-coloured samples; Mr. C. GRIGG, Battle, was 2nd.

There were six dishes of King of Tomkins County, Mr. S. Osborn, gr. to the Duke of FIFE, East Sheen, Surrey, having the best samples. Still, the bulk were too large for dessert purposes. The same may be said of Washington, of which seven dishes were shown, Messrs. WOODWARD and GRIGG taking the prizes.

Lord Buryleigh made a moderate show, as it is too early for it. Mr. MAXIM had the best. Mannington Pearmain was much better, though irregular. Mr. WOODWARD had the best again, Mr. FARR coming 2nd.

Again Mr. WOODWARD was 1st with Margil, a fruit which makes a poor show; Mr. JONES being 2nd. And with Mother Apple, seven dishes being staged, the best came from Mr. A. SMITH, of Roehampton; Mr. A. HEMP, of Coddhurst, Horsham, being 2nd.

There were no fewer than twenty-one dishes of the good old Ribston Pippin, samples generally being excellent: Mr. STOWERS was 1st, and Mr. SLADE, gr. to Lord POLTIMORE, being 2nd. The latter had the best Rosemary Russet of four dishes. One dish only of Ross' Nonpareil was staged, coming from Mr. P. H. Sage, gr. to the Marquis of CAMDEN, Lamberhurst. Of Scarlet Nonpareil, Mr. J. HUDSON, Gunnersbury House Gardens, had much the finest. Sturmer Pippin, like some others, was not yet in form. Worcester Pearmain was, on the other hand, in beautiful condition. Mr. DAVIES putting up a most perfect sample for the 1st prize; Mr. STOWERS coming 2nd also with most beautiful fruits. There was but one dish of Winter Quarrenden. Finally, of any other variety, there being twenty-five dishes staged, Mabbot's Pearmain, from Mr. WOODWARD came 1st; and Mr. Godden, gr. to F. W. BUXTON, Esq., Sawbridgeworth, was 2nd, with fine Reinette du Canada. Of others shown were good Nanny Weathers, Duchess Favourite, and the Houblon.

DESSERT PEARS.

Taken collectively, the Pear exhibits in these classes were good, and the competition in many very keenly contested.

The first-class, that for Beurré Ballet père, a variety not much grown, brought but one entry, that of Mr. WOODWARD's who was awarded the 1st prize.

In the Beurré Bosc class nine dishes were staged, the 1st prize going to Mr. J. Friend, gr. to the Hon. P. C. GLYN, Rooksnest, Godstone; 2nd, Mr. Webb, gr. to H. PADWICK, Esq., The Manor House, Horsham. Beurré d'Anjou brought four competitors, Mr. G. H. Sage, gr. to The Marchioness CAMDEN, Bayham Abbey, Lamberhurst, being 1st, with fine samples; 2nd, Mr. Chamberlain, gr. to F. LONERGAN, Esq., Cressingham Park, Reading.

Ten exhibitors staged Beurré Diel, the 1st prize lot, a very fine dish, coming from Mr. W. Allan, gr. to Lord SUFFIELD, Gunton Park, Norwich; 2nd, Mr. Turton, gr. to J. K. D. DIOBY, Esq., M.P., Sherborne Castle, Dorset. Out of three competitors for Beurré Dumont, Mr. WOODWARD was 1st, the same number of competitors also staging Beurré

Fouquerey, for which Mr. SAGE was a good 1st; 2nd, Mr. THOMAS. Mr. WOODWARD gained premier honours for Beurré Hardy among eight competitors with a handsome dish; 2nd, Mr. STOWERS. Mr. THOMAS was first with Beurré Mortillet, a highly coloured sample from Mr. WOODWARD being just past. Eleven exhibitors put up very fine Beurré Superin, the best came from Mr. THOMAS; 2nd, Mr. STOWERS.

The excellent little Pear Comte de Lamy, brought a better competition than usual, nine dishes being staged, the 1st prize lot coming from Mr. Harris, gr. to O. E. SMITH, Esq., Hammerwood, East Grinstead; 2nd, Mr. ALLAN.

Conference was also shown in good form by eight exhibitors. 1st, Mr. WOODWARD, with excellent examples; 2nd, Mr. Barks, gr. to H. PARTRIDGE, Esq., Castle Hill, Bletchingley. Doyenné du Comice brought eleven competitors and all good samples; Mr. WOODWARD was 1st for a large and highly coloured dish; 2nd, Mr. Harrison, gr. to Col. ARCHER HOUBLON, Bishop's Stortford. Only two dishes of Duchesse de Bordeaux were forthcoming of average merit, but in the following class, that for Durondeau, eleven fine lots were staged. Mr. TURTON coming 1st. Mr. WOODWARD, 2nd. The last-named exhibitor was invincible in the next class of Emile d'Heyst, among five exhibitors, 2nd, Mr. ALLAN. Fondante d'Automne was strongly contested by ten exhibitors, Mr. Jones, gr. to J. R. BROUGHTON, Esq., Carshalton, coming 1st; 2nd, Mr. ALLAN. Mr. WOODWARD gained another 1st for Fondante de Thirriott, with a fine dish; and among eleven competitors, in the following class, for Glou Moreau, held a similar position, Mr. JONES, 2nd.

Josephine de Malines was well shown by ten competitors. 1st, Mr. WOODWARD (very fine); 2nd, Mr. ROSS.

Louise Bonne of Jersey was one of the most hotly contested of the Pear classes, nineteen dishes being staged, a fine clean lot; Mr. SLADE, Poltimore Park, Exeter, came 1st; 2nd, Mr. Farr, gr. to A. PEARS, Esq., Spring Grove House, Isleworth.

Marie Benoist was staged by five exhibitors; 1st, Mr. H. H. GODDEN, 2nd, Mr. WOODWARD.

Marie Louise found fourteen competitors, 1st Mr. ALLAN; 2nd Mr. THOMAS. Six handsome dishes of Marguerite Maril-lat were put up by as many exhibitors, Mr. WOODWARD coming in a good 1st; 2nd, Mr. THOMAS.

Mr. Vert, gr. to Lord BRAYBROOKE, Audley End, Saffron Walden, was 1st for Nouvelle Fulvie; 2nd Mr. WOODWARD. Four dishes.

Pitmaston Duchess made a fine show, eighteen dishes being staged. 1st, Mr. G. GRIGG; 2nd Mr. WOODWARD.

Suckle, 1st Mr. ROSS, with a pretty dish; 2nd Mr. MAXIM. A fine lot of Souvenir du Congrès was staged by Mr. J. RICH, who was 1st; 2nd, Mr. THOMAS, seven lots. Thompsons:—

1st, Mr. ALLAN; 2nd, Mr. A. R. Allan, gr. to Lord HILLINGDON, Hillingdon Court, Uxbridge, five dishes being shown, Triomphe de Vienne was grandly shown by seven exhibitors, Mr. SLADE coming 1st; 2nd, Mr. Sanders, gr. to A. DE ROTHSCHILD, Esq., Hulton, Bucks.

Winter Nelis found ten competitors. 1st, Mr. WEBB; 2nd, Mr. WOODWARD. Twenty-seven dishes were staged in the concluding class, for any other variety than the preceding, the 1st prize lot coming from Mr. WOODWARD, a fine dish of Madame Treve; 2nd, Mr. C. Sutton, gr. to Earl STANHOPE, Chevening Park, Sevenoaks, with Magnate. Marie Louise d'Uccle, Brockworth Park, Easter Beurré, Doyenné Boussoch and Conseiller de la Cour were also well shown in this class.

THE PARIS EXHIBITION.

The temporary exhibition for September 12 was more brilliant than some of its predecessors. We had the pleasure of seeing many foreigners among the competitors.

The GERMANS, who were the most numerous, brought cut flowers and flowering plants in season. Mr. PRITZER, of Stuttgart, showed Gladioli, Montbretias, and tuberous Begonias with crested flowers. Mr. NEUBRONNER showed varieties of Begonia rex; Mr. BRENNER, well cultivated plants of Ardisia crenulata. Mr. WREDE, Mr. LICHTENBERGER, and Mr. HENKEL, were also exhibitors.

From LUXEMBOURG, Messrs. GENEN & BOURG, and Messrs. SOUPERT & NOTTING sent, as before, magnificent Roses.

From ENGLAND, Messrs. SANDER & Co. were the only exhibitors, showing Pandanus Sanderi, and small plants of Retinospora Sanderi (Hort.), which is probably hardy in the South of France.

BELGIUM.—Mr. DRAPE DOM was the only exhibitor from this country, but he alone occupied nearly half the space allotted to foreigners. His exhibit consisted of groups of Dracenas, Ferns, Codieums, Caladiums, Dieffenbachias, and various ornamental foliage plants. The SOCIÉTÉ DES BAINS DE MER, of Monte Carlo (gr. M. Vauden Daele), showed a magnificent lot of Codieums in fine specimens excellently cultivated. The exhibitors received the warm congratulations of the Jury, and a well merited 1st prize.

In the FRENCH section the flowers of the season were more brilliant than ever; among them were Dahlias, Cannas, Gladioli, Asters, and early Chrysanthemums. MM. VILMORIN, ANDRIEU ET CIE., were well represented in this category. Mr. GRAVEREAU showed Asters; M. DUPANLOUP, Dahlias and Cannas; M. NONIN, Cactus Dahlias; VALTIER & FERRARD, China Asters; MOLIN, Cactus Dahlias; whilst M. LEMAIRE exhibited Chrysanthemums, among them the beautiful Princess Alice of Monaco. M. DESIRÉ BRUNEAU showed Cratogeomys Pyracantha, and Hibiscus syriacus; Messrs. URBAIN, VALLERAND & BOIVIN presented Begonias; and Messrs. BILLIARD & BARRE, superb Cannas. M. LIONNET brought a pretty Chrysanthemum named M. Liger Ligneau, of a golden-yellow colour. Messrs. LANGE, DALLÉ, CHANTRIER, and the CHANTIN family, exhibited ornamental plants, Palms, Cycad s

Aroids, &c. Messrs. CAYEUX & LECLERC had Dahlias, Millet Gladioli; JUPEAN, DEFRESNE, ROTHEBERG, and LÉVÊQUE, showed Roses; Messrs. LÉVÊQUE, REGNIER, and others, sent Carnations; DUVAL & FILS, Codieums and Dracenas as well as cultivated market plants.

Orchids were represented by M. MARON, with numerous hybrids, and Cattleya Eldorado alba. Messrs. DALLEMAGNE, CAPPE, BÉRANEK, BERT, REGNIER, DALLÉ, and BINOT, also exhibited in this class. In Mr. BÉRANEK's group were comprised Cattleya × Ella inversa (bicolor × gigas), Miltonia vexillaria Leopoldi, Vanda Sanderiana, Cynochos chlorocheilon, &c. MM. BINOT's group of Miltonias were numerous natural hybrids, some between M. Clowesii and M. spectabilis; M. Lawrenceana and allied forms, and lastly M. Cogniauxiae, which seems very free-flowering.

Vegetables and fruits were magnificent. G. T. G.

HORTICULTURAL SHOWS IN JERSEY.

THERE have been several excellent shows in the island this summer, including that of the Royal Jersey Agricultural and Horticultural Society, assisted by the Society of Jersey Gardeners. This was the principal one, and by far the most extensive. Of this I propose giving a few particulars; but, taking them in order, the show of the St. Lawrence Horticultural Society comes first. This was held at Millbrook on August 9, when the weather was very unpropitious, and the attendance consequently poor. It was a one day's show.

The grand show of the Royal Jersey Society was a much more comprehensive affair of four days' duration, when the weather was all that could be wished, if not too hot. This was held in the Springfield Pavilion and grounds at St. Helier's, and I attended it on the opening day, August 14. I am not able to give all the information I wish, because my rather late application for a copy of the schedule did not meet with any response. The show was open from 3 to 11 p.m. each day—rather unusual hours, but then there were side-shows and other attractions, including a grand shooting competition, open to ladies, a magic-lantern, a "grand battle of confetti" one evening, and "a grand confetti battle" the following evening. My visit was limited from 3 to 6, so that I neither witnessed nor took part in the sports.

Taking the show as a whole, it was disappointing, because, although the exhibits were generally good in quality, and often excellent, the arrangements left much to be desired, and some parts were, to say the least, very untidy. This may have been due to the fact that several affiliated societies had sections allotted to them, and as I learnt from a report in a local paper, the arrangements of their exhibits were left absolutely to their own discretion. I am sorry not to be able to agree with the same report that the results were satisfactory, though the arrangements may not have been so stiff as formerly, as the report goes. Most of the groups of plants were so crowded as to neutralise individual beauty, and little was done to set up either fruit, vegetables, or flowers to the best advantage; and packages and rejected articles had not disappeared. One was too much reminded of a market, where quality is a sufficient recommendation. No doubt somebody worked very hard, but many little things were left undone. Even the band was left to play in the blazing sun, though it was under a framework intended to support an awning. But, of course, many of these things may have been remedied later. As would be expected, Potatoes and Tomatoes were abundant and excellent; and I may mention, by the way, that the local paper reported this season's exports of the former at between 400,000 and 500,000 pounds.

Two things struck me particularly in connection with this show. They were the very small afternoon attendance, and the very large number of prizes taken by individual exhibitors. Bearing on the latter point, I have before me the official prize list of the St. John's and St. Mary's exhibits. From this I learn that there were only twenty prize-takers; but one exhibitor took fifty-six prizes, including nearly all the 1sts for vegetables! The next in order of success took fifty-two prizes, but he was more prominent in the classes for cut flowers. Other exhibitors secured twenty-three, twenty-one, nineteen, eighteen, seventeen, and twelve prizes respectively. This monopoly may account for the comparatively slight interest in the exhibition, as evinced by the small number of visitors.

Judging from the list of awards published, the show of the St. Lawrence Horticultural Society, held at Millbrook, was of the same character. There were apparently only ten exhibitors who gained prizes. What the proportion of unsuccessful competitors must have been I cannot say, because I did not visit the show; but the successful ones obtained forty-six, thirty-four, thirty-one, twenty-five, twenty-four, twenty-three, fifteen, seven, five, and four prizes respectively. In this show there were 169 classes, besides extra prizes.

Returning to the St. Helier show, I may mention that there were some very fine trade exhibits by the leading growers, including, as the report says, "every kind of fruit grown by them, as well as all kinds of plants, flowers, &c." W. Butting Hemsley.

COMMUNICATIONS RECEIVED.—Weldons, Limited.—D. R. W. (Scotland), both communications have been received.—R. D.—J. W.—S. G.—D. S.—J. C.—A. Corps.—M. C. T.—Cunningham & Wyllie.—F. N. & Co.—A. W.—W. T.—"Grape Grower."—H. W.—J. Bluck.—R. S. P.—Hants.—G. G. W.—G. C. E.—J. Maplethorpe.—J. S. P.—J. H. S.—D.—H. C.—W. B.—Alpine.—Proctor, Chesterfield.—J. J. W.—T. W. R.—J. M. S.—T. C. H.—W. R.—B. Bonney.—W. E.—F. P.—Hersel.—Sutton & Sons.—De B. C.—F. S. Embleton.—J. Weston.—J. G. W.—Frank W.—G. M. Ab'ey.—Lincoln.—P. W.—S. A.—W. T. H.—A. R. M.—Rose.—Peed & Son.—W. G. S.—C. N. N.—S. W. Fitzherbert.



CRATÆGUS CRUS-GALLI AT STREATHAM.



THE

Gardeners' Chronicle

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DAUGHTERS OF THE YEAR. SEPTEMBER.

THE year has two autumns, the first "Vintagearious," to quote Carlyle's rendering of the French Revolutionary Calendar; the last, "Fogarious" and "Frostarious;" and the Vendémiaire, the soft, rich season of mists and mellow fruitfulness, is coincident with September. Half mysterious, half pathetic, is the stealth and hush it brings. Nature lies in grateful rest; the trees in their soberest, deepest green, unflecked as yet by later autumn colouring; the stubble fields, eloquent of duty done, in yellow harmony with surrounding roots and pastures; the barred, white clouds, all day motionless across the blue; the winds "upgathered now like sleeping flowers," until the equinox shall let them loose. The garden too revels in the season; hardly even in June were the borders brighter. Of true herbaceous plants, indeed, only a few are left; Helianthus of several kinds, Helium grandiflorum and striatum, Japanese Anemones, white and pink—we shall add the crimson variety next year; Phloxes, and invaluable

Gaillardias; but radiant amongst these are Petunias, tall blue seedling Campanulas, and the yellow annual Chrysanthemums, native as well as foreign. Salpiglossis continues its daily surprises in novel, brilliant colouring. Above all I rely on Marigolds, both Calendula and Tagetes, setting off their bronze and yellow by patches of deep red Pelargonium. Why will the garden dictionaries associate Marigold with the Virgin Mary? She has her floral courtiers, but these are not among them. Where such a name-derivation does exist, it is always traceable in foreign synonyms; here there is nothing of the kind. The botanical French for Marigold is Souci, the German Ringel-blume, the Italian Fiorraficio. It is the old English Merse-gealla (Marsh-gold) applied to the wild Caltha palustris, transferred through superficial resemblance to the Calendula of our gardens. Like Rose-Mary, Sweet William, Sweet Cicely, Sweet Alison, John Quill, Nancy-Pretty, it holds only by accident and misleadingly the Christian name.

Our narrower borders, edging the sun-dialled lawn, are set thick with Asters and Lobelias, interspersed with the feathery foliage and white bloom of Marguerite, all gallantly out-lasting the month. It contains no "beds," only on a sloping bank a Salisburia, oldest of surviving forest trees; a tall Genista Andreana, and a graceful clump of silvery Pampas-grass. Across the drawing-room window interlock Virginia Creeper, now fiery-red, and old-fashioned Clematis flammula, bidding fragrant good-morrow, like Milton's Sweetbriar, at early rising, to the opened bedroom casements just above. The Roses are yielding up a plenteous aftermath. Each morning brings to the breakfast-table their reminders of summer gone. Then—

"Here are Sweet Peas, on tiptoe for a flight,
With wings of gentle blush o'er delicate white;
And taper fingers catching at all things
To bind them all about with tiny rings."

Daily watering, weekly liquid manure, removal of all pods as they appear, have retained them in unchecked beauty; planted out in April they will flourish till the frosts. The giant Sun-flowers are at their grandest, passing carriages salute them as they tower above the kitchen-garden wall, and the inmates crane their necks to see the bloom beyond. Of this there is no lack. Great Balsams lol about, and fill the air with soft warm apricot scent. The huge orange-like calyxes of Physalis Francheti look down upon the smaller Alkekengi. Many-coloured spikes of Gladiolus are slowly climbing up their stems. Sea Holly—Albert Dürer's favourite; in a well known portrait, he holds it in his hand—grows side by side in sandy soil with its amethystine sister, E. Oliverianum, which I brought from Amiens. On the ample pink corymbs of Sedum spectabile, said to have appeared in an English garden—none knew whence—some forty years ago, Peacock-butterflies, Red-admirals, Painted Ladies, sun themselves all day long. [It is of Japanese extraction. Ed.] The little Cyclamen from Lorenzo di Medici's garden has put out autumn leaves and flowers. Japanese Polygonum, shedding its long, white, terminal spikes, tops a pole ten feet high. Here and there among the vegetables, thinned away to give it room, stands a spreading Thorn-apple, with trumpet flowers, prickly capsules, wrinkled seeds, neighbouring its close relation, Henbane. Both are wilful plants, coming up where they please, not where the gardener pleases; like the steak, which the emotional butcher in-

sinuated into Tom Pinch's pocket, they "must be humoured, not drove."

Finally, there is Vin d'Italie, Phytolacca, grown in the Burgundy vineyards to deepen the tint of the red wines; brought thence, a tiny plant, nine years ago—of fair proportion now, and covered with its black berries. As I stand before it, those beautiful slopes of the Côte d'Or come back to me. It is the harvest season; far as the eye can reach under the transparent sky spreads the panorama of trim Vines, 4 feet high, out of which in one spot faintly towers the Notre Dame of distant Dijon. Amongst the Vines grow standard Apricots, Peaches, Pears—very rarely Olives, we are not far enough south for them. The leaves are golden-brown; from the lower branches hang the purple Grapes. Women are everywhere cutting them with hooked knives into baskets, which men bear to the roads, and empty into enormous vats carried in low carts:—

"Reeling with Grapes, red waggons choke the way;
In England, 'twould be dung, dust, or a dray."

About the Vines twine brilliant Ipomœas, mingled with the thick ears of the Panet Grass, Penicillium spicatum, Blue Pimpernel, Bloody Geranium. Hopping or flying through them are large, many coloured locusts. There on the low hill-sides grow the precious high-priced Grapes, Chambertin, Nuits, Pommard, Richebourg; lower down is produced the thin Ordinaire, in the hands of peasant holders owning about 3 acres each, from which in a fair year they clear £100.

We have begun our preparations for next year. A thousand seedling Wallflowers are pricked out, one cannot have too many, with a smaller store of Polyanthus. Strawberry-beds are formed, Carnations layered, the finest Pansies broken up and planted in good soil, cuttings thriving in the cold frame. The garden is full of blackbirds, for the Hesse Pears are ripening. They peck the stalks until the fruit falls, excavate it as it lies upon the ground, then leave it to the wasps, and return for fresh spoliation. They are welcome; they will leave enough for the gathering, and we cannot spare their concerts. If only they would warble as well as eat; but their songs belong to fruitless months:

Golden thy bill—the silver tongue
Cold February loved is dry;
Plenty corrupts the melody
That made thee famous once, when young.

But February will come again, and they will nest and sing once more in the garden which fed and sheltered them. It has fed other than blackbirds in the week past.

Yearly when the harvest is well in, we spread a table on the lawn, and welcome the small tenants of our small estate, about a score in number, to what they call "a knife and fork tea." To see them eat cold beef and ham is to forget lunch and long for dinner; their tongues once loosed, there follows talk from which Thomas Hardy might glean dialogue, dignified as it is by only half intelligible local Dorset. Then come clean pipes and screws of shag tobacco, with much peaceful gossip as to the year's yield of Wheat, anecdotes of bygone famous harvests, criticism of neighbours' farming, till dusk and dew descend. The "largest" farmer present proffers rough but cordial thanks, and slowly they disperse, their friendly gratitude out-weighing far the trivial boon bestowed, but enriching our loved garden with the touch of altruism which all sublunary enjoyments, enthusiasms, ideals, necessitate to make them perfect. *Corymbus senex.*

NEW OR NOTEWORTHY PLANTS.

SPIRÆA AITCHISONI (Hemsl.), N. SP.*

(SEE FIG. 75).

WHEN I assisted the late Dr. J. E. T. Aitchison in working out the collection of dried plants he made in the Kuram Valley, Afghanistan, in 1879, we had before us a *Spiræa* which we named *S. sorbifolia*, L. (*Jour. Linn. Soc.*, xviii., 1880, p. 52). Specimens of the same were sent to the late Edmund Boissier, and he (*Flora Orientalis*, Suppl., p. 230), referred them to *S. Lindleyana*, Wall. In 1888 Wenzig named it *Spiræa sorbifolia* var. *angustifolia* (*Flora*, lxxi., p. 283). Subsequently seed of the same *Spiræa* was sent to Kew, the first in 1880, I believe, by Mr. Robert Ellis, who collected it in Cashmere. In 1895 a further consignment was received from Mr. J. F. Duthie, Director of the Botanical Department of Northern India, but where he collected it I cannot ascertain at the present moment. The first flowering at Kew seems to have taken place in 1889, and now there is a good stock of large plants. On the left-hand side of the walk leading from the Cumberland Gate across to the Broad Walk, and about midway between the two points, is a large bed of *S. Aitchisoni* and *S. Lindleyana* intermixed.

Until last year the first had passed as a variety of the latter, but Mr. G. Nicholson, the Curator, who had long had the plants under observation, pointed out to me obvious differences, not only in general appearance, but also in the leaves, flowers, and ripe carpels. I agreed with him that the differences were sufficient to warrant the giving of a distinctive name, and he, in his modesty, wished me to give it one, and publish it with a description. This I willingly undertook, but the publication has been delayed. I now have much pleasure in dedicating it to the memory of its discoverer, one of our most enthusiastic and successful botanical explorers.

Spiræa Aitchisoni is a shrub very similar in habit to *S. Lindleyana*, and is quite hardy in open places at Kew. The largest examples of it are 6 to 8 feet high, with numerous almost unbranched stems springing from the same root or stock. It differs from *S. Lindleyana* in having a smooth, red, usually bright red bark; dark green, almost shining, glabrous leaves, with a slender rachis; and narrow, lanceolate, smaller leaflets, tapering to the base with a less rugged surface, and a less distinctly duplicate-toothed margin; and in the individual flowers, which are at least one-third larger; the carpels are also larger. In opposition to this *S. Lindleyana* has green bark, hairy when young; leaves of a pale green tint, hairy on the under surface; leaflets broad and rounded, or cordate at the base, and the margin distinctly duplicate-toothed. Ornamentally *S. Aitchisoni* is superior to *S. Lindleyana*. The leaves are usually about a foot long, with fifteen to seventeen leaflets; the uppermost ones about half that size, and the terminal inflorescence varies from 1 to 3 feet in length.

Dr. Aitchison's wild specimens were collected in water-channels, affluents of the Kuram river, Afghanistan, in about 34° N. lat., and 70° E. long., at elevations of 7000 to 9000 feet. They exhibit exactly the same characters as the cultivated ones. It would be interesting to know something more definite of the localities where it was found in Cashmere by Messrs. Duthie & Ellis. By permission of the Director of Kew I am able to send a drawing from plants still in flower. I may add that there have been great differences of opinion as to specific limits in this section of the genus *Spiræa*. For instance, in the *Flora of British India*, ii., p. 324, *S. Lindleyana* is reduced to *S. sorbifolia*; but few botanists have concurred in this, and I think that anyone seeing them side by

side under cultivation would give them specific rank. There is also a difference of opinion as to the limits of the genus *Spiræa*. The name *Sorbaria* was long ago proposed for *S. sorbifolia*; and *S. Lindleyana*, *S. grandiflora*, and *S. Kirilowi*, belong to the same group. Taking this view, our plant would have to be called *Sorbaria Aitchisoni*.

ACAPETES MANNI.

In the *Gardeners' Chronicle* for September 24, 1892, p. 364, I described an Indian shrub, which flowered at Kew, under the above name, but the fruit was then unknown. It is now bearing fruit in the temperate-house. The fruit is a fleshy, globose berry, about half-an-inch in diameter, dark red in colour, with a glossy surface. Although a pretty shrub, *Acapetes Manni* is not one that is likely to become popular. The fruit is wholesome, but possesses no special qualities to recommend it. *W. Botting Hemsley*.

CHRYSANTHEMUMS.

HOUSING THE PLANTS.—No time should be lost in housing those plants intended to produce large blooms. In all collections there is a percentage of plants that open their blooms earlier than the bulk of varieties, and also some that are late in development. The great point about exhibiting *Chrysanthemums* is to have all varieties fully developed at a given date. Those belonging to the class I have quoted therefore require housing first, because those that unfold their petals early will be injured by rain and heavy night dews if left out-of-doors longer, while those that are backward in developing may be too late for the shows.

An ideal house for the plants during their flowering period would be a roomy span-roofed structure, where they could have abundance of light and air, and be at the same time close to the glass, to prevent the peduncles from being drawn up. Few gardeners, however, have such conveniences at hand, and many makeshift structures have to be utilised. One result of this is, that the plants are crowded. There is now-a-days such a craving after the new varieties which are sent out in large numbers annually, that growers often overburden themselves with them, to the detriment of well-known and good sorts.

The remedy for this is to grow but a limited number of plants, bearing in mind the rule that it is better to grow fifty well than one hundred badly.

Vineries and Peach-houses from which the fruit has been gathered, and where the leaves are falling, are suitable places for the *Chrysanthemums*, especially the early plants. Here they will obtain an abundance of air night and day; but first prune back all lateral shoots from the Vines, and it will not harm them if most of the side shoots which have borne the first crop during the current year are shortened.

In the case of Peach or Nectarine-trees, much of the pruning that is too often left until the spring may be done now with advantage, not only to the *Chrysanthemums*, but to the Peach-trees themselves.

Where but one house is available for the plants, they must be so arranged that the late varieties have the warmer end of the structure. It is a good plan to place the Japanese varieties in a house by themselves, so that more fire-heat can be given to them during the time the blooms are developing. The flowers are improved, the colours are made brighter, and the florets develop more regularly than they do where no fire-heat is employed.

Previous to housing the plants they should be examined thoroughly for mildew, and if this is present, the usual remedies should be adopted, even if it be necessary to lay the plants down on their sides, and thoroughly syringe them with a fungicide. Where the attack is slight, it may suffice to dust the affected parts with sulphur. The best system by which to arrange the plants, is that of forming them into a sloping bank; it is most con-

venient, and best for the plants also. If the house has a lean-to roof, with a southern aspect, and a path at the back of the house, and the *Chrysanthemums* be arranged so that they face this path, the attention the plants need may be conveniently given them; and as they would thus face towards the north, no shading will be required.

In all cases place the plants as near to the glass as possible; the colours of the flowers will by this means be developed to the highest degree possible. The plants may be placed quite closely together, and the leaves of one plant may touch those of the next to it, as seldom can sufficient space be spared to do otherwise. When the plants have been arranged in a solid bank, the bottom leaves of most of them will quickly turn yellow and fall, but I do not know that much harm can happen to the plants in consequence. *E. Molyneux*.

NORTH MYMMS, HATFIELD.

THIS bids fair to become in time one of the fine gardens of the kingdom. Mrs. Burns has great gardening tastes, and is gradually developing here all those fine horticultural associations we like to find surrounding the residences of our landed proprietors, who have so long been the great supporters of gardening.

North Mymms is situated some two miles above Hatfield, in the direction of Barnet. The mansion is of the Elizabethan style of architecture, has a bold, massive appearance, and though large, yet seems not to have satisfied ordinary requirements, as a large wing has recently been added. Immediately round the mansion there are few trees, but some of the brightest and most perfect lawns conceivable. I have never seen lawns anywhere more perfect and of velvety texture than they are here. These are divided on their various aspects by terrace-walls, and are without flower-beds, with the exception in one place of a border of Roses, chiefly hybrid Teas, which seem to thrive and bloom profusely. On the older portion of the mansion climbers have been effectively trained, and there are many choice ones planted against the new wing, so that in a few years the apparent freshness of the new brickwork will be toned with greenery.

The park is some 800 acres in extent, and is now entered from the main road by a new gateway of massive character, the carriage drive being carried by a noble brick viaduct over an old river bed. This new roadway was one of the earliest works carried out by Mr. C. R. Fielder, who came here to serve Mrs. Burns as gardener shortly after the death of his former employer, the late Lady Howard de Walden, of Great Malvern.

In connection with this improvement a great deal of planting has to be done. So also will much be done in association with a large pond passed by this drive, and which it is purposed to convert in time into one of aquatic plants, including, of course, *Nymphaeas*, for which it seems to be so admirably suited; elsewhere a further home for aquatics is in the air, with also very much planting. Indeed, improvements of an extensive nature seem likely to be carried on for some years to come. As evidence of the munificence which characterises garden-work, it is but needful to mention the splendid range of garden offices and bothies which are of the very best character possible, the latter furnishing accommodation for ten men. Fruit rooms, stores, potting, and packing sheds, &c., are all of the very best.

The kitchen-garden is here a fine feature. It is as nearly as possible square, and entirely enclosed by a 10-foot wall. From the top on each side tiles are fixed to project 4 inches, and thus a permanent eave is formed. Each wall is about 80 yards long, giving a total length of 320 yards. But the south aspect is chiefly covered with a fine range of glasshouses, and from the centre a further range of span-houses, run out into the garden. But there are in all directions numerous other walls, all planted with fruit trees, so that, what with Peaches, Nectarines, Apricots, Pears, Plums, and Cherries, there are

* *Spiræa Aitchisoni*, Hemsl. — Species ex affinitate *S. Lindleyana*, a qua differt ramulis folisque glabris, ramulis rubescentibus, foliis anguste lanceolatis utrinque angustatis supra subnitidis margine saepe simpliciter serratis, floribus carpellisq. majoribus.

on these walls literally hundred of trees, indeed, far more than I have seen in any private garden. It is useless to enumerate varieties, for every known good one is there planted, the bulk of them some three to five years. In every case the best of health is found, and trees are generally cropping well. A few years hence the wall-fruit produce here should be enormous in amount. The soil is of a good loamy

plants. These have the benefit of some thin tiffany shading, as it helps to repress thrips. Princess of Wales, La France, Italia, Luxonne, Victoria, and Princess Beatrice, are amongst the singles; and Marie Louise and Mrs. J. J. Astor, deep-blue, of the doubles. These later will be lifted into pots, boxes, and frames. It was a very fine lot of plants.

garden walls are wired, there being about sixteen strands in each case; whatever may be the objection held to training trees in this way, certainly all trees here seem to do remarkably well, and the walls are saved from much injury. Certainly so numerous are the trees, and so great the wall surface, that training is immensely aided by the wiring method. On one warm border was a large breadth of Maize, Green Corn-Cobs, not ordinarily a favourite British vegetable, being here in great request.

Roses seem to be grown by thousands, not being in single plants, but in masses. I have rarely seen a more pleasing effect than was found in big beds of Jean Nabonnand in full bloom, planted on a carpet of mossy Saxifraga, which completely covered the soil and kept it cool. It is in the Rose garden, and the adjoining portion so finely dressed with hardy perennials planted only last March, and all sorts of hardy and tender annuals, that there are seen in the centre broad cross-walks of deliciously green turf, but on the outer parts broad walks of flag-stones, in the crevices between which grow all sorts of tiny rock plants. The turf is a hundred times preferable—but tastes differ. It is perhaps for the same reason I do not care for Italian pergolas, of which there is a huge one, cross-shaped, in the adjoining garden. The pillars are of massive brickwork, coated with white rough plaster, and topped by stout, wooden beams; but when the whole of the structure is entirely hidden by climbers, of which there is planted for the purpose a very fine collection, no doubt the effect will be largely diverse, and possibly pleasing; still, it is very doubtful whether the effort to engraft Italian gardening on to our cold climate and style is likely to be successful. Certainly, if successful anywhere, it should be at North Mymms, because of the effort made to clothe that which is ungainly with the best possible of material. Such fine things as *Buddleia variabilis*, *Polygonum Balduianicum*, a marvellous grower; Clematises, Roses, and many other things are doing well; all having been but lately planted.

Fruit under glass is well represented, there being no fewer than seven large houses alone devoted to Peaches and Nectarines; these gave wonderful crops. Of Grapes, the chief is Muscat of Alexandria, four houses being devoted to this variety; some grand bunches could be cut here. Madresfield Court is also in fine condition. What may be described as poor flavoured Grapes are not grown. Some idea as to the extent of the glass may be gathered from the fact that there are twenty-six plant and fruit-houses, besides myriads of frames. Altogether it bids fair to be a fine place in good time. A. D.

FOREIGN CORRESPONDENCE.

STRASBURG.

THIS city has undergone a great transformation of late years. True, the cathedral remains as ever a miracle of beauty in stone-work, but the other public buildings are mostly new, and those devoted to science-teaching, by their number, size, and equipment, make an Englishman feel rather small. The Botanic Garden, however, has not undergone much change since we saw it before the Franco-German war. It is of considerable extent, once on the outskirts of the city, but now built in on all sides. It is open to the public all day long except for two hours in the middle of the day, an arrangement common enough here, but which would be intolerable in England. An avenue of Horse-Chestnuts leads to the garden, and in it is placed a bust of Goethe. Of later years the labours of Kirschleger, Schimper, and De Bary have conferred honour on the garden. The upkeep of the garden evinces economy in the matter of labour, which is in curious contrast to the expenditure on the many "institutes," including that devoted to botany.

The central range, of iron and glass, is imposing, but out of date, and ill-suited to the growth of



FIG. 75.—*SPIRÆA AITCHISONI* (HEMSL.).

An upper leaf and upper portion of inflorescence: natural size. A flower and a fruit enlarged. Leaves dark green, shining above. Flowers pure white. (See p. 254.)

nature, and evidently suits trees well, as it also does vegetables, for these in every direction are first-rate, and for a garden so comparatively new, wonderfully good. Better tall Peas, for instance, especially Autocrat and Chelsonian, could hardly be found anywhere; and the dry, floury nature of the Potatoes speaks volumes for the soil's excellence. Still it needs a few years more of culture to bring it into perfectly fertile condition. In one part of the garden is a huge breadth of double and single Violets, some 2500 in all, and quite strong

Strawberries and bush-fruits are in great abundance. Of the former, Royal Sovereign, Leader (which does so well here), President, and Waterloo, are those most largely grown. The new Lord Kitchener is being tested for next year's fruiting. A quarter of Superlative Raspberry, trained to wire-trellis in five lengths, each 120 feet long, gives a first-rate example of culture. I noticed that the soil beneath was heavily mulched with manure, a precaution which Mr. Fielder said was absolutely needful in that garden to retain moisture. All the

plants. At the time of our visit the usual occupants were mostly turned out into summer quarters, but tree Ferns, Palms, succulents, and Fourcroyas were still under glass.

The collection of Cacti and allied plants seems a rich one, but what is specially interesting is a collection of species of *Fuchsia*. In these days of hybridisation and obliteration of old landmarks, it is most desirable to have the original species under cultivation for comparison and research. Again, it seems to us very desirable that botanic gardens, especially the smaller ones, should make a point of excelling in one or two particular groups. It is hopeless to expect that in the smaller, poorly endowed gardens the collections should be complete, or manifest anything approaching completeness. But if each little garden had its specialty, as Strasburg has in the matter of *Fuchsias*, botanical research would be facilitated, and the utility of the garden enhanced.

The herbaceous and outdoor departments are extensive and well arranged. One of the most interesting features of this part of the garden is a vertical wall, in the chinks of which, as well as on the top, numerous alpine are thriving. A perforated pipe running along the top of the wall affords the requisite moisture. Other alpine are cultivated on a sloping rock border, but as very few of the plants were in bloom, it would be of no avail to give a mere catalogue of names. A raised mound affords a fit situation for hardy *Opuntias*, such as *O. Rafinesquiana*, *O. brachyarthra*, *O. camanchica* (the latter bearing abundance of fruit), and other species. *Sedum Stahlia* is a large growing form, with thick reddish leaves, which fall off and give rise to little bulbils, by means of which the plants may be propagated. *Kalanchoe grandiflora* marmorata is remarkable for its very large spoon-shaped, or rounded fleshy leaves, with numerous large purple blotches on a green ground.

A pond with a group of *Musa Ensete*, surrounded with *Papyrus* and *Wigandias*, is very effective. By the side of this pond is a good specimen of *Taxodium distichum*, and especially of the pendulous variety sometimes but erroneously called *Glyptostrobus*. *Pterostyrax hispida*, with its elegant drooping panicles of flowers, was in bloom, as also *Panax sessilifolium*, and *Parrotia persica*.

We left this interesting garden with the hope that the authorities will not expend all their energies on grandiose Institutes, but will devote some of their funds to the maintenance and improvement of the gardens. The value of botanic gardens for instruction and as a means of research is not appreciated on the continent as it should be. *Rambler, Sept. 24.*

NEPENTHES "SIR WILLIAM THISELTON DYER."

With the exception of *N. Northii* (*Gardeners' Chronicle*, 1881, p. 717, fig. 144), this is the finest *Nepenthes* yet introduced into our gardens. It was raised in the nurseries of Messrs. James Veitch & Sons, exhibited by them at a recent meeting of the Royal Horticultural Society, and named by them in compliment to Sir William T. Thiselton Dyer, the Director of Kew. Not the least of his works at Kew has been the erection of a *Nepenthes* house, so that the dedication of this fine variety to him is specially appropriate. When one considers the ancestry of this fine form, there is no room for surprise at its merits. It was raised as a cross out of *N. mixta* × by *N. Dicksoniana* ×, both fine varieties, and figured in these columns (see 1888, iv., 543, fig. 78). *N. Dicksoniana* × was raised out of *N. Veitchii*, by pollen of *N. Rafflesiana*, and *N. mixta* × was the progeny of *Northiana* and *Curtisii*. The general appearance of the pitcher is shown in our illustration (fig. 76, p. 257), the colour of the spots being purplish-brown on a green ground. As shown, it is larger than either of its parents. The finely-ribbed rim is sometimes undulate, as in *mixta* ×; the wings have a fringe of fine brownish hairs, and the lid has not only the

ordinary long, slender spur at the back, but also the hump-like process which is characteristic of *N. Curtisii* (see 1887, ii., 681, fig. 133). It is the finest plant shown this season.

THE BULB GARDEN.

STERNBERGIAS.

THE value of these pretty, and for the most part autumn-flowering bulbs, was demonstrated on the 25th ult., when Mr. Hudson brought three distinct forms to the Drill Hall from Mr. Leopold de Rothschild's garden at Gunnersbury.

The exhibit was one of *Crocuses*, *Colchicums*, and *Sternbergias*, these latter being represented by three distinct varieties, viz., *S. lutea*, *S. l. major*, and *S. macrantha*. All are sufficiently distinct, and good to be worth growing in a collection of hardy flowers.

S. macrantha, which received a First-class Certificate on the occasion in question, is a native of Asia Minor, having been originally sent home by Mr. Whittall. It is a large and bold flower, possessing some of the boldness, in the bud stage, of the larger *Colchicums*, and not a little of the shape or outline. The plant flowers in autumn, minus the foliage, which follows in spring. Speaking generally and comparatively, this species is rather lacking in refinement, yet its bold flowers will meet with admiration. I believe it was shown by the Messrs. Wallace, of Colchester, about a year ago. The most beautiful and refined *Sternbergia* is *S. lutea major*, the rich yellow blossoms glistening as though highly varnished. It has also a characteristic way of expanding its flowers, one petal first falling well outwards, till the whole assumes a much more widely expanded form than is usual in *Sternbergias*.

The plant shown as *S. lutea* may probably be *S. l. angustifolia*, which is a freer and more certain bloomer. *S. lutea* and its varieties have the merit of producing flowers and foliage at one time. *S. colchiciflora* also blooms in the autumn, but it is rare. The flowers are smaller, of a clear yellow colour, and the foliage does not appear till spring. Somewhat allied to *S. lutea* in its growth is the spring-flowering *S. Fischeriana*, whose flowers appear as early as March. I have not, however, seen this in large quantity, and it seems slow to establish itself or increase.

The bulbs of *Sternbergia* should be planted in rich sandy loam, in a warm, sunny position. Where the soil is of good depth, the bulbs may be inserted fully 6 inches deep. Not infrequently, these plants require some patience, and cheap bulbs may require a year or two before they attain to flowering size. Want of knowledge in this direction sometimes causes the cultivator to disturb the bulbs after they have been planted a couple of seasons. *Sternbergias* are very effective on grassy banks and slopes, where there is little or no treading, and here, as in a variety of positions in the garden, they are among the most attractive of autumn flowers. *J.*

[We believe *S. macrantha* is considered to be a variety of *S. colchiciflora*. See *Index Kewensis*. Ed.]

A REVIEW OF THE SEED HARVEST.

IT is now possible to forecast with something like accuracy the results of the seed harvest at home and abroad; and it must be admitted the outlook is by no means assuring, for from every quarter there comes evidence of an unusual shortage of crop of all agricultural and vegetable seeds, from Tares down to the smallest of kitchen garden plants. The causes of such an all-round deficiency are not far to seek: one main cause was the drought which prevailed at the planting season a year or so ago, many plants which were put out perished; in some cases little or no planting could be done at

all; and of the plants put out, not a few were killed by the severe winter.

Boston is an important centre of the Lincolnshire seed-growing industry, and when there a few days ago, I heard Mr. Frank Martin, a leading farmer of the district, and a large seed-grower, say that although previously it was possible to take a stand on an elevated position, like the tower of Boston Church, and see hundreds of acres of seed-plants in blossom, this year, owing to the causes above named, the quantity of land so occupied was quite small.

Mangel-Wurzel being an article with which the old-established seed firm of Messrs. W. W. Johnson & Son, Ltd., of Boston, have large dealings, I interviewed Mr. E. J. Deal, the firm's manager, who has recently been making an inspection of the seed crops in many parts of the country, as well as abroad, and learned from him that in March last the plants of *Mangel* standing for seed which had been put out in the previous August, then looked flourishing, but the severe drought which followed caused many of the roots to go blind, and become worthless as seed-producers. This applies more to tender sorts of high quality, such as the Golden Tankard, which is one of the scarcest sorts this year.

In Essex, where great quantities of *Mangel* are grown for seed, the cutting of the seed-plants commenced this season three weeks earlier than is usual, thus establishing quite a record, for owing to the dry weather, the seeds matured quickly and rapidly; and breadths which promised to yield one ton per acre, are now at the time of writing put at from 4 to 7 cwt. only. In Lincolnshire, owing to the colder climate, the seed-plants suffered more than they did in the south, the severity of the winter being experienced in greater degree, consequently the average of the *Mangel-Wurzel* crop is only about one-twentieth of its usual bulk, though, owing to the holding character of the soil there is a better yield in the more northern county. From France and Germany have come reports showing that the crops there are also very short.

White-fleshed Turnips show a yield that is more satisfactory than that of *Mangels* or *Swedes*; the seeds of white Turnips make plants more quickly than those of *Swedes*, and at planting time, despite the drought, they were sufficiently advanced to put out at the proper time, though the extent of the planting done was below the average. When the plants started into growth in the spring, the forcing weather caused them to become thin and drawn, so much so, that at the time of blooming, a well branched plant was the exception rather than the rule, consequently the seed crop is decidedly light.

An average crop of *Swede-Turnips* was sown, but the drought which prevailed did not admit of the plants growing into sufficient size to plant out at the proper time, consequently the acreage for seed was less than it has been known for many years. Anyone taking a journey through the *Swede*-growing districts of the country would see a solitary field here and there, instead of hundreds of acres. Then, soon after the plants were cut and laid to dry, came the violent winds of July and early August, scattering the plants, and shedding to waste much of the seed, in some cases resulting in an almost entire loss of crop. Mr. Deal mentioned one instance of a crop of seed plants of one acre, which when inspected at the time of cutting was estimated to yield twelve bushels of seed has, owing to the action of the wind, produced only one and a sixth of a bushel. It is certain the supply is small, and the samples indifferent.

Kohl-Rabi seed will be very high in price, as there is a great scarcity, and the same can be said of Rape. One grower in Lincolnshire claims to have the only crop of seed in the county, whereas it is usual to have several hundreds of acres grown for seedling. Brown Mustard, so much preferred by Mustard manufacturers for its richer colour, is a short crop, but the samples are extra fine.



FIG. 76.—NEPENTHES "SIR WILLIAM T. THISELTON DYER."
(One-third less than real size. See p. 256.)

White Mustard is also a small crop, and some of the samples indifferent, white seeds being numerous.

Peas.—In respect of the general crop, it may be said that the first early varieties, both round and wrinkled, show very short supplies, owing to the general drought. Storms in Germany, and drought in Canada, have seriously affected the yield in those countries. Late Peas promise rather better, but of no section of Peas can it be said that there is an average crop. Blue Boiling Peas, so largely consumed in the manufacturing districts, are about three-fifths of an average crop; and samples are small. The markets in which these are quoted opened at about 20 per cent. advance in value as compared with the corresponding period last year.

Probably the state of the labour market may have had something to do with the scarcity of the breadths of land planted for seed purposes; it is very difficult in places to obtain needed labour, and this causes farmers to be somewhat chary in taking contracts for seed-growing, seeing that seed-farms require more labour to be expended on them than on ordinary arable land.

Broad Beans started well into growth, especially in Lincolnshire, where they are largely cultivated; the drought operated to make the seeds small, though the yield is, as far as can be determined at present, nearly up to the average. French Beans, especially the Runner types, are expected to be a short crop, as, owing to the prevailing heat and drought at the time of the first bloom, and upon the maturation of which so much of the crop depends, seed pods were not produced; although recent rains have produced an abundant blossom, it is doubtful if, at this advanced period of the year, there is time for the seeds to be matured and ripened before frost comes. In Germany, where large crops of Runner Beans are grown, similar conditions have operated to reduce the crop.

Brassicas have suffered in much the same way as the Swedes and Turnips; crops which were favourably estimated in the green pod, have in some cases only yielded one-fourth of the average, the rough winds having caused a considerable waste of seeds.

Radish seeds are much scarcer than has been experienced for years; the crops in France, which may be said to be the home of the Radish-growing industry, are an absolute failure; the seed-beds produced good plants, but the excessive heat caused them to shrivel up while standing in the seed-beds, and so became worthless for planting out when the rains came. In Germany there was a better promise until July, but the continuance of exceeding hot weather since has reduced the crop to a lower level of yield. English crops of Radish are still standing on the ground, but they are not good; generally speaking, these will not be threshed out until next summer. It is usual for Radish seed to remain in the stack for a twelve-month to become thoroughly hardened for threshing.

Onions.—The English Onion crops are very short breadths this season, and will not be sufficient to affect the supply to any appreciable extent. French crops promised well up to the end of June; from that time they have gradually deteriorated. Italian-grown Onions of the softer types are very poor crops, the samples of seeds light in weight, and of indifferent growth.

Lettuces, in respect of French-grown crops, promised wonderfully well up to the flowering period; at this stage the plants suffered from the ravages of maggot, which attacked the blossoms, and seriously affected the production of seeds. The German crops promise somewhat better.

Carrots.—Last season from various causes there was a short supply of Carrot-seeds, and the prospects of the present are but little better, though a different estimate was formed earlier in the season. Short Red Carrot-seeds are particularly scarce; it is almost a certainty that sufficient seed will not be available to meet requirements. Added to the short acreage to be found in France, caused by the freezing of the roots for planting in the winter,

those which were planted when the flowering stage were reached, were attacked by an insect which only made its appearance in large numbers last year for the first time. This remark applies especially to the Carrot-growing districts of the Loire valley.

Parsnips and *Parsley* are both short crops; they further illustrate the fact that there is everywhere a general shortage of yield. *Pisum*.

AMERICAN NOTES.

THE United States Delegate to the International Botanic Congress at Paris is Dr. N. L. Britton, who landed at Liverpool, en route for the French capital, on September 29. The Doctor will spend a short time in London visiting Kew, and proposes to pay other visits to botanical gardens on behalf of the New York Botanical Garden, of which he is Director-in-chief. The entire organisation of that institution has been built up by the persistent and painstaking energy of Dr. Britton, and to-day the metropolis of the new world ranks in this respect with similar cities of the old.

How true it is that prophets are not duly honoured in their own country. Here is another incident. An agricultural and horticultural school was recently opened in the immediate outskirts of New York City at Briarcliff, and we find the chair of agriculture given to one Samuel Fraser, a graduate of the Sheffield school. He is reported to have arrived here but a few weeks ago "to study American agriculture," and has accepted the chair in the new-founded school. This fact should be an encouraging one to the agricultural student in England, and may be regarded as highly complimentary to the training of what schools exist.

Another recent arrival from Great Britain, Mr. W. H. Waite, lately foreman of the herbaceous garden of the Edinburgh Botanic Garden, has secured a good head gardener's place with S. Untermyer, at Greystone, Yonkers, New York, one of the famous gardens on the Hudson river, a few miles up beyond New York city.

I would not have it understood from the foregoing remarks that New York city and its sisters in the States offer a bonanza for the gardener; far from it. There are very few opportunities for gardeners, as the art of horticulture is not so highly developed on this side of the Atlantic. A man who combines gardening and farming stands a fair chance of an engagement. Then the conditions of life and service are very different: the gardener usually has to board the whole of the garden staff, and perhaps some others as well, which means a large amount of extra work. There are plenty of good gardeners already here who cannot find good places; and fresh arrivals but add to the numbers, unless they accept places at what are really very small figures, but which sound big in English money. It should be remembered that the cost of living is greater in America than in England. B.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Olare Lawn, East Sheen, S.W.

Cleansing houses.—Light being so necessary to the health of plants, everything that is possible must be done at this season to make the most of the lessened amount there will be during the next six months. Where many compartments have to be attended to, those containing the hardier species of Orchids, such as *Cattleyas*, *Lælias*, *Dendrobiums*, &c., should be done early, leaving those that may still require shade until later in the year, the dirt and slimy accumulations affording shade enough when the sun is not strong. I am no advocate of dirt in any shape or form, but have often noticed the healthy appearance of plants growing in dirty, tumble-down houses, and have wondered whether that which by many is considered dirt, is in reality useful. To please the eye, we lime-wash the walls, scrub and paint the stages and the water-pipes. Certainly, dirty walls, stages, &c., hold the moisture better, and give it off more gradually and continuously than clean ones, thus producing a more congenial and equable atmosphere. The roofs of all houses, however, should certainly be cleaned once

a year, and near large towns the outside glass requires to be cleansed several times during the winter season. The most expeditious method of cleaning an Orchid-house is to first scrub the pots the plants are in, and remove them to one end of the house or to another compartment. Then scrub the wood-work and glass, after which the plants may be brought back and arranged temporarily in position. When this has been done, all the plants should be carefully examined, and every leaf and pseudo-bulb cleaned with a sponge before the plants are finally arranged in such a manner that each will enjoy a position suitable to its requirements. Unless such an operation has been recently done, it will be well to fumigate each house before the work of cleansing commences.

Temperatures.—As a working standard, the following temperatures may be accepted as suitable for some time to come:—

Stove or East Indian-house	... Day, 70°; night, 65°.
Cattleya and Mexican-houses	... " 65°; " 60°.
Intermediate-house	... " 63°; " 55°.
Cool-houses	... " 55°; " 50°.

The temperatures during the day will vary slightly by reason of alterations in the outside conditions, but the night temperatures should be kept as evenly as possible by the use of artificial heat. During moist, warm weather, the mercury may be allowed to rise a point or more above the degree given, but it must be accompanied by increased ventilation at the bottom of the house.

Vanda Sanderiana, which is now flowering, is very difficult to maintain in a thriving condition, especially when it has carried a spike or two of its large, handsome flowers. These flowers should be removed as soon as the last bloom has expanded; and afterwards all the sphagnum-moss taken from the roots of the plants, and the plants placed during the winter in a light, warm position in the East Indian-house. *V. Sanderiana* may be grown successfully if tied to bare rafts suspended in a house having a warm, moist atmosphere; in this condition, it is impossible to give too much water by direct application. From now onward, the moisture in the atmosphere will be almost sufficient.

Vanda cœrulea is another grand Orchid that is often grown with indifferent success. Importations appear to come from various districts and altitudes, and lack of information on these points often prevents us succeeding with them, because those from a low elevation require a high temperature and humid atmosphere, and those from much higher elevations a cool, airy position. As the present is the flowering season, keep the plants moderately dry and cool until early spring. The best plan is to suspend them near the roof-glass, and only give them root-waterings occasionally. If there is much sphagnum-moss about the roots, remove the greater portion of it, so that saturation of the base may not occur.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

The Conservatory or Greenhouse.—*Tacsonias*, *Tecomas*, *Mandevillas*, *Bignonias*, *Solanum jasminoides*, *Passifloras*, and other climbing or pillar-plants, should now be thinned very considerably, in order that the plants underneath them may be exposed to more light and air. *Salvias* in particular need a light position, that the brilliant colour of the flowers may develop perfectly. The *Salvias*, with early-flowering *Chrysanthemums* and zonal *Pelargoniums*, will give a bright appearance to the conservatory during the next few weeks. Where it is possible, a house should be devoted exclusively to zonal *Pelargoniums*; in order that they may be afforded a temperature of 50° to 55° at night, and a drier atmosphere than is necessary for most other plants. Examine the plants carefully for caterpillars upon the outer surface of the leaves, as they cause the foliage to become disfigured by spotting. Some are so small as to escape notice, but by holding the plant on its side, and brushing the foliage in an upward direction with the hand, they may be easily displaced.

Gardenias.—As the flower-buds form upon these, pinch out the points of all the young shoots around them, which if left would cause the buds to become blind. If the plants are infested with mealy-bug, lay them on their sides, and thoroughly syringe them with an insecticide; though with periodical treatment with a "vaporiser" this pest can now be easily kept under.

Cyclamens should now be moved to a light house, and placed on shelves, where the temperature at

night will not fall below 50°. Continue to afford the plants a supply of weak manure-water, and examine the under-sides of the leaves for thrip, which if present, should be destroyed by "vapourising" the plants at intervals of eight or nine days.

Miscellaneous.—Move *Linum trigynum* and *Eranthemums* from cold pits to the intermediate-house. Cease to shade *Bouvardias* and *Solanums* as soon as possible, and afford them more water at the roots, and freer ventilation. Examine Roman *Hyacinths* that were earliest potted, and if the roots have reached the bottoms of the pots, move the plants to cold frames, and shade them for a time until the leaves have become green. They may then be introduced in batches to gentle warmth to force them into flower.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Peaches and Nectarines.—Any re-arrangement of the trees in early houses, or any lifting of trees needed to check excessive vigour, may be now commenced. The foliage is still green upon these trees if it has not been injured by red-spider, but any sudden loss of foliage from lifting indoor-trees at this season will not be injurious. The work of removing should be entrusted only to men familiar with the work. Old trees need to be taken out very carefully, and every fibrous root saved, while strong ones should be shortened. When replanting, afford the trees a large addition of fresh loam, together with $\frac{1}{2}$ -inch bones, burnt earth, and brick rubble. See that the drainage is good, and replant as quickly as possible. Subsequently the border should be kept moderately moist, and the trees be syringed once or twice daily. Afford a thin mulch of short manure over the border, and defer for a short time any pruning the trees may require. Trees that do not require any root-pruning may have their roots pruned at once; and if any trace of scale or red-spider is seen, the shoots should be carefully washed with a soft brush, always drawing it from the base of the shoot to the point. Use a strong solution of carbolic soap and nicotine. No painting of the trees will be required if the washing is carefully done. The house also should be scrubbed in every part with carbolic-soap and water, and the walls whitened with lime-wash and sulphur. When the trees have been re-arranged, and the shoots trained, lightly fork the surface of the borders, and remove as much of the old soil as possible, replacing it with good fibrous loam, burnt ashes, and soot.

Late-houses.—Some of the latest fruiting varieties, such as Golden Eagle Peach and Victoria Nectarine, may be afforded a little fire-heat, to develop good finish and flavour in the fruits. Avoid anything approaching a close atmosphere, and admit a little air night and day, but do not syringe the trees. Expose the fruits to the sun as much as possible. The fire-heat may be continued for three weeks after the fruit has been gathered.

Figs in Pots that were forced early and were subsequently placed out-of-doors should now be housed in some cool well-ventilated structure, where frost will not reach them. Prune away any useless or unnecessary growths, especially from the centres of the trees, but do not shorten those that are left. Cleanse the trees from all insect pests, and if they be affected with bug, paint them over with a solution of tar and clay—one part of the former to three of the latter. This will keep them in check, and most likely destroy them altogether without injuring the young fruits. Afford careful attention to those pot-trees which fruited later, and do not allow them to become quite dry at the roots. Many of these trees are now rooting freely in the top-dressing that was afforded them, and should be encouraged to do so for a little while longer, after which they will need rather less water.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westcott, Tetbury, Gloucestershire.

Lifting Potatoes.—In most districts, the late Potato-crops are now ready for lifting; and an effort should be made to get this work done during dry but dull weather, so that the tubers may not need to be exposed for a long period to air and sunlight, nor the soil become trampled whilst in a wet, soddened condition. In this garden it has been found on lifting the tubers that a great number of them are attacked by the disease. Although some growers think it necessary to let

the tubers dry, if wet, before pitting them, I prefer to remove them at once to their winter quarters, because a few hours exposure to the sun and light does them no good. If it be not possible to put them at once into a permanent position, the tubers may be stacked in small heaps on the ground, and matted over to exclude light and rain from them. As the Potatoes are dug up, select them into two separate heaps, collecting the tubers of medium size for seed, and setting aside for consumption those of a larger size, and that are sound. Any tubers attacked by disease should be promptly burned. It is of great importance to have suitable means for storing Potatoes, so that they need not be placed in a warm room or shed, or too heavily matted up, which may cause the tubers to shrivel or sprout. If the whole of the crop cannot be stored in a cool, dark shed, and they are properly pitted in the open, Potatoes will keep equally well, providing the soil on which they are placed is not of a heavy nature. A good, well-drained, cool position should be chosen, and a ridge made about 3 feet wide and 4 feet high, running from north to south. When the tubers have been carefully stacked, they should be slightly covered with bracken, and a covering of 8 or 9 inches of dry, light soil spread over the whole ridge. Finally, a good layer of straw may be put over, but do not substitute straw for the Bracken over the tubers, as it soon rots when in contact with the earth. No harm will result should a little soil find its way among the tubers.

Seed Potatoes.—Much care is necessary to properly preserve the tubers reserved for seed next season. If there be premature sprouting, and it becomes necessary to remove the first shoot, those which come after are never so strong. The tubers should be laid out evenly on a shelf, in a cool, airy house, after being allowed to become green, which in a measure retards sprouting. By next spring the tubers should be firm, and the sprouts sturdy and strong.

General Work.—Make good any blanks that have occurred in the recently-planted Cabbages. Should any of the leaves of the plants have a bluish colour, it is certain that the grub has begun its work, and the sooner such plants are removed, the better. Continue to sprinkle soot, as previously recommended. Should the herb garden be still unharmed by frost, make another cutting of herbs. Chillies that were planted at the foot of a south wall, and have numerous partially-ripened fruits, should be lifted and placed in convenient-sized pots, but particular care is required to preserve the roots intact. If placed in a little fire-heat, the fruits will soon ripen.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Ilchester, Abbotsbury Castle, Dorsetshire.

Storing of Bedding Plants.—The newly-rooted stock of *Pelargoniums* and other bedding plants which require protection in winter should be housed without delay. As this work is in progress examine the plants to remove decaying foliage, and lightly prick over the surface-soil in the pots. Place the plants on shelves in a house or near to the roof-glass in frames, so that each plant may be encouraged to become sturdy and strong. The lights may be tilted on the frames so long as the weather will permit, but it must be done in such a manner as will prevent rains from entering and soddening the soil. There is still time to secure further cuttings of any rare varieties it may be desirable to increase, but they must be placed immediately in warm frames or greenhouses; and if *Alternantheras*, *Coleus*, &c., are required in considerable quantity, the old plants may be lifted, headed back, and potted. Afford them a warm temperature and they will soon form new roots, and may subsequently be removed to a cooler structure and placed near to the glass. Such plants will afford plenty of cuttings in spring.

Solanum Jasminoides.—This vigorous climber is now a mass of white flower. It is only hardy in the most southern counties, therefore take short lateral growths, and insert the cuttings in pots in a slight bottom heat under a bell-glass. The plant may also be propagated by root cuttings about the size of a wheat-straw, which should be inserted in sandy soil in deep pans. When growth has commenced, pot them up into 3-inch pots in rich sandy soil.

Schizostylis coccinea.—This bulbous species is one of the most attractive of autumn or winter flowers.

It requires a well-drained soil, which should be trenched or dug deeply in spring, and enriched with plenty of well-rotted manure. When the soil has again become settled, open out shallow drills 8 in. to 10 in. apart, and place the corms rather thickly together. The plants will not require to be transplanted for three or four years. A warm sheltered position is needed, or a moveable frame may be placed over the site, and the light used only during frost to protect the blossom.

General Work.—Where *Rhododendrons* and *American peat plants* are grown largely, it will be well to procure a quantity of peat for use when required. When digging this peat, trim off the longest coarse grass, &c., and make the peat into a square stack, placing the turves grass side down. In the early spring this will be found more easy to break up, and therefore more convenient for use. Bracken being so useful for protective purposes in winter, a quantity should be cut while there is still life in the fronds, for if left until it is sere and yellow, the foliage will fall away, and much of its value for covering purposes lost. When cut, it should be stacked, and a protective thatch placed over it against rains. Leaf-mould that is well decomposed should be screened, and stored in sheds for use in winter. This should be done before there are accumulations of fallen leaves from lawns and shrubberies.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Varieties to plant, continued: Apples.—In order to obtain ripe fruits for dessert during the greater part of the year, the following varieties may be planted:—Mr. Gladstone, Beauty of Bath, Duchess of Gloster, Lady Sudeley, Devonshire Quarrenden, Worcester Pearmain, Yellow Ingestre, Fearn's Pippin, King of Pippins, Cox's Orange, Ribston, Margil, and Allington Pippins, Adams' London and Claygate Pearmain, Scarlet and Old Nonpareils, Sturmer, King's Acre, and London Pippins. Of good culinary varieties, the following can be recommended viz., Lord Suffield, Lord Grosvenor (which generally succeeds where Lord Suffield fails), Warner's King, Ecklinville, Golden Spire, Stirling Castle, Lady Henniker, The Queen, Cox's Pomona, Tyler's Kernel, Belle Pointoise, Lord Derby, Peasegood's Nonsuch, Cellini, Reinette du Canada, Kentish Fillbasket, Beauty of Kent, Mère de Ménage, New Northern Greening, Sandringham, Annie Elizabeth, Royal Russet, Hanwell Souring, Alfriston, and Dumelow's Seedling. All the foregoing sorts may be grown as bushes, or pyramids, in borders skirting the footpaths in the kitchen-garden, or for planting in the garden-orchard. Most of them also will succeed if cultivated as espaliers, a useful system by which to screen from view the vegetable quarters. Extra fine and highly coloured fruits of Cox's Orange Pippin may be secured by planting maiden trees, and afterwards confining them to single stems, which should be trained against a fence or wire-trellis. Ribston Pippin attains a high degree of quality when grown as a diagonal-trained tree on a west wall.

The Quince should be planted in a moist situation, and will succeed better as a standard than as a bush, but if a great quantity of the fruits is not desired, one or two bush-trees of the Pear-shaped variety will suffice.

Medlars.—Two or three trees are generally sufficient for a private garden, and the best varieties are Dutch, Nottingham, and Royal.

Brambles.—According to my experience the best among the Brambles is *Rubus laciniatus*. The Japanese Wineberry (*Rubus phoenicolasius*) should be also included, it being a very free bearer, and the reddish-brown fruits are juicy and agreeable. These Brambles may be trained on fences, or to wire-trellises in a similar manner to Raspberries.

Crabs.—The best of these are the Dartmouth, Fairy, John Downie, Orange, Siberia, and Paul's Imperial. In addition to Crab-trees being so ornamental when in flower and fruit, the fruits are useful for preserving purposes, and they make delicious jelly.

Figs should be afforded a warm position against a wall, and the wood needs to be thinly trained, and the roots restricted. The finest variety for out-door culture is Brown Turkey. Recluser and White Marseilles may be included if variety be desired.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, OCT. 9. — Royal Horticultural Society's Committee.
National Chrysanthemum Society early Exhibition (3 days).
Paris Exhibition (temporary show).

SALES.

MONDAY, OCT. 8.—Dutch Bulbs, at Messrs. Protheroe & Morris' Rooms. Palms, Bulbs, &c., at Messrs. Stevens' Rooms, 38, King Street, Covent Garden.
TUESDAY, OCT. 9.—Dutch Bulbs, at Messrs. Protheroe & Morris' Rooms.
WEDNESDAY, OCT. 10.—Twelfth Annual Great Fruit Tree Sale at Ferry Hill, Cliffe, near Rochester, by order of Messrs. W. Horne & Sons, by Messrs. Protheroe & Morris, at 11.30 (two days). Dutch Bulbs, at Messrs. Protheroe & Morris' Rooms. French and Dutch Bulbs, at Messrs. Stevens' Rooms.
THURSDAY, OCT. 11.—Dutch Bulbs, at Messrs. Protheroe & Morris' Rooms.
FRIDAY, OCT. 12.—Imported and Established Orchids, and Dutch Bulbs, at Messrs. Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—52°3'.

ACTUAL TEMPERATURES:—

LONDON.—October 3 (6 P.M.): Max. 61°; Min. 49°.
October 4, fine, windy.

PROVINCES.—October 3 (6 P.M.): Max. 61°, Surrey; Min., 43°, N.E. Scotland.

In these days, when the cultivation of cereals ceases to be remunerative, and when even if it were so the quantity we could produce would be wholly inadequate to our requirements, it is a matter of great importance to see what, if any, substitute can be found to occupy the energies of the agriculturists. Market gardening, flower growing for market, bulb-raising, fruit growing, have all been tried, and all with a measure of success which may justify the adage which tells us not to put all our eggs into one basket. Among these minor industries, if the term minor be really applicable, is the growing of Hemp for its fibre.

Across the channel, Hemp is grown in large quantities, but here it is rarely seen save as a decorative plant in flower-beds. In Picardy it is very largely grown, and the market-place of Abbeville may, at certain seasons, be seen filled with the Hemp brought in by the neighbouring farmers. Our climate, then, can hardly be unsuitable for its growth, nor are there any special difficulties in its cultivation or its preparation. A little book before us,* although it is primarily intended for the farmers of the United States, is well worth the attention of the British cultivator.

To ensure a fine fibre, and plenty of it, the following conditions must be observed:—Deep and thorough cultivation of the soil, the application of nitrogenous manures to favour the production of the fibre, and rapid growth to produce a softer, more silky texture. These are the essentials. Drainage to carry off the surface moisture and render the soil warmer, is desirable in some localities. The seed is sown broadcast at the rate of a bushel to an acre;

or it may be drilled, in which case the distribution is more even, and the subsequent crop more uniform in stature. In the southern counties Hemp may be sown in the autumn, an autumn-sown crop being preferable to one grown in the spring. This is consistent with the experience of Mr. Boyce. After the seed is sown no weeding is required, as Hemp is a sure destroyer of weeds. The author is an enthusiast, and some of his statements would probably have to be discounted in this relatively sunless country; nevertheless, there can be no doubt that Hemp might profitably be added to the farmer's crops. The necessary preparation of the ground would be of benefit to any future crop. The cleansing of the fibre might perhaps be better done by the manufacturer than by the farmer. In any case, he who would grow Hemp will do well to consult the little volume which furnishes the text of this note.

For decorative purposes there are few more elegant or graceful subjects; and the plant may also be grown for seed for pheasant-food or birdseed generally. Its use in paper-making may also be alluded to, to give point to our statement that we do not make so much out of Hemp as we might. For medical purposes it is of no use to try to grow it out of the tropics, the narcotic principles not being sufficiently developed in colder climates.

THE WORKMEN'S COMPENSATION ACT.—In the last session of Parliament a short Act was passed which places agriculture under the provisions of the Workmen's Compensation Act of 1897, this taking effect from July 1, 1901. Now, according to the Act constituting the Board of Agriculture, horticulture is to be read as a portion thereof, together with forestry and gardening of every description—fruits, flowers, vegetables. It is needless to say that the subject is one of great importance to all employers of labour in horticulture. In the meantime, the Board of Agriculture have issued a "leaflet" on the matter, which is well worth careful perusal. The little brochure may be obtained free of charge, and post-free, on application to the Secretary, Board of Agriculture, 4, Whitehall Place, London, S.W. Letters of application so addressed need not be stamped. The Act is as follows:—

"1.—(1.) From and after the commencement of this Act, the Workmen's Compensation Act, 1897, shall apply to the employment of workmen in agriculture by any employer who habitually employs one or more workmen in such employment.

(2.) Where any such employer agrees with a contractor for the execution by or under that contractor of any work in agriculture, section 4 of the Workmen's Compensation Act, 1897, shall apply in respect of any workman employed in such work as if that employer were an undertaker within the meaning of that Act.

Provided that, where the contractor provides and uses machinery driven by mechanical power for the purpose of threshing, ploughing, or other agricultural work, he, and he alone, shall be liable under this Act to pay compensation to any workman employed by him on such work.

(3.) Where any workman is employed by the same employer mainly in agricultural but partly or occasionally in other work, this Act shall apply also to the employment of the workmen in such other work.

The expression "agriculture," includes horticulture, forestry, and the use of land for any purpose of husbandry, inclusive of the keeping or breeding of live-stock, poultry, or bees, and the growth of fruit and vegetables.

2. This Act may be cited as the Workmen's Compensation Act, 1900, and shall be read as one

with the Workmen's Compensation Act, 1897, and that Act and this Act may be cited together as the Workmen's Compensation Acts, 1897 and 1900.

3. This Act shall come into operation on the first day of July, 1901."

THE ROYAL HORTICULTURAL SOCIETY'S COMMITTEES will meet on Tuesday, October 9, in the Drill Hall, Westminster, when a lecture on "Figs in Pots" will be given by Mr. JAMES HUDSON, V.M.H.

We are informed that the Sherwood Silver Cup, 1900 (founded 1898), value £10 10s., will be offered for open competition at the Drill Hall meeting on November 6, for fifty-four dishes of fruit (six fruits to a dish) grown by the exhibitor in the open air, namely, eighteen varieties of cooking Apples, twelve varieties of dessert Apples, eighteen varieties of dessert Pears, and six varieties of cooking Pears. The 1st prize will be that of the Sherwood Silver Cup; the 2nd prize a Hogg Medal and £3; and the 3rd prize a Silver Knightian Medal and £2. The competition will be subject to all the usual conditions of the Society. Notice of intention to compete must be sent to the secretary, Royal Horticultural Society's office, 117, Victoria Street, Westminster, not later than the last day of October.

HORTICULTURAL CLUB.—The first dinner and conversazione for the session 1900-1901 will take place on Tuesday, October 9, at 6 P.M. The subject for discussion will be "The Fruit Crop of 1900," to be opened by GEORGE BUNYARD, V.M.H.

M. E. PYNAERT.—The many English friends of this gentleman will learn with great concern that he is in very bad health. The sympathies of all connected with horticulture at Ghent will be extended to M. PYNAERT and his family.

A SEEDSMAN M.P.—Colonel W. G. WEBB has been returned unopposed Member of Parliament for the Kingswinford Division of Staffordshire. Colonel WEBB is the senior partner in the firm of WEBB & SONS, the QUEEN'S Seedsmen, Wordsley, Stourbridge.

ADENOSTYLIS.—Some few years back we alluded to the value of this herbaceous perennial for decorative purposes. Having seen it in Switzerland in beds and also in pots, we again call the attention of our readers to the plant. It is a Composite, with foliage resembling a Cineraria, and the flowers have also a distant likeness to some of the species of this genus.

MONSTROUS BEGONIA.—M. E. H. KRELAGE sends us a flower of a crested Begonia bearing both stamens, and an ovary with style and stigma. It is interesting to note that the ovary is wholly "superior," and occupies the place of a stamen. When such flowers were first noted in our columns in or about 1859, they gave rise to much discussion on the part of Mr. DARWIN, Sir JOSEPH HOOKER, and others.

THE PHYLLOXERA IN SWITZERLAND.—This pest made considerable progress last year in Switzerland, and in Waadtlande (Vaud) the Vines were attacked with great virulence. Of the 6,568 hectares planted with Vines, thirty-four hectares were devastated by Phylloxera. Although the percentage of $\frac{1}{2}$ p.c., may appear small, the seriousness of the case lies in the fact that sixty-eight out of a total of 183 wine-growers, i.e., roughly about one-third, had their vineyards affected. The owners hesitate to introduce the American Grapevines as stocks on which to graft, fearing a deterioration of the good quality of the wine, although nothing else can be done.

NOTTINGHAM ALLOTMENT HOLDERS.—In the Eastern Division of Nottingham there are a large number of small garden allotment holders (commemorated in Dean Hole's *Book of the Rose*), who, for a nominal rent, obtain sufficient ground in which to produce all the vegetables they require. The expansion and changes which have recently taken

* *Hemp*. . . A practical treatise on the culture of Hemp for Seed and Fibre, with a sketch of the History and Nature of the Hemp plant. By S. S. BOYCE, New York Orange Judd Company. London: KEGAN PAUL, TRENCH, TRUBNER & CO.

place in this part of the town threaten to disturb the holders, and for this inconvenience they claim compensation. But, not content with monetary compensation, the garden holders claim the right to remove the stock. The garden holders have formed themselves into a body called the Federation of Garden Holders, and are endeavouring to influence the elections to gain their ends.

COLCHICUM SIBTHORPII.—From Mr. EWBANK we have received specimens of this handsome species. The flowers are of large size and rich colouring, the segments being densely chequered with violet on a white ground; a yellowish stripe occupying the segment from the base upwards for more than half their length. "This Colchicum," says Mr. EWBANK, "has divided with *Sternbergia macrantha* the autumnal honours of my garden, and it would be difficult to say which is the more attractive of the two, but the Colchicum is much more floriferous. . . . It is well worth the attention of anyone who wants to have an exceptionally fine thing in his garden at this time of year."

EMIGRATION PROSPECTS.—We extract the following particulars from a circular issued from the Emigrants' Information Office, 31, Broadway, Westminster, on October 1:—

"The season for emigration to Canada is now over, except for female servants, who are always in large demand, and for persons with capital.

"In New South Wales there is plenty of farm labour of a kind, but there is a considerable demand for skilled hands; farmers, however, as a rule do not offer permanent employment, but only during the busy seasons.

"In Victoria there are excellent openings for farmers, dairy farmers, and fruit-growers, if they have a little capital, and some experience of the country. Also for general female servants, able to do cooking, washing, and housework; and cooks, housemaids, nurses, &c., in the larger towns.

"In Queensland the demand for farm labourers and domestic servants continues, and the colony is now granting considerable assistance in the way of free, assisted and nominated passages to this class of labour.

"The last report shows that there were plenty of work in New Zealand.

"Persons are warned against going to South Africa in search of work, so long as the war lasts. They will not be allowed to proceed up country. There are large numbers of persons there at the present time who are out of employment."

CALIFORNIAN VEGETABLES FOR LONDON MARKET.—In so excellent condition do all kinds of fruit arrive from California, that it was determined to try the experiment of introducing Asparagus to the English market. As we are told, the experiment has been tried, but the cool chamber of the steamer was a trifle too cool; the "grass" was frozen, and so rendered unfit for marketing. Next season every effort will be made to furnish supplies of Asparagus in good condition to consumers here at a reasonable charge. It is a "long order" from the Pacific to Covent Garden. By-and-by it may be found possible to make it a paying concern to place orders for the same vegetable at the Cape.

FRUIT CULTIVATION AT WYE COLLEGE.—Our correspondent, Mr. WALTERS, Eastwell Park Gardens, Kent, informs us that the authorities of the South-Eastern Agricultural College have commenced fruit-cultivation in earnest, and experiments will be made in respect to the effects of different manures upon the size and colour of the fruits. When our correspondent visited the establishment recently the fruit-trees were most promising, and were growing well, and producing excellent crops. As the soil of the district is poor, and of little depth, upon a subsoil of chalk and gravel, the conditions are not of the best; but Mr. DEADMAN, the horticultural instructor at the college, has in a large measure overcome these adverse circumstances.

"WHEAT-EAR" SWEET WILLIAM.—The Carnation not infrequently produces in place of flowers a series of overlapping bracts, which form a spike and give a superficial resemblance to a Wheat-ear. Sweet Williams are liable to a similar change. We have received from Messrs. J. CARTER & Co. an excellent specimen of the peculiarity. To the botanist it is very interesting, but the flower-lover would prefer the plant not to be so eccentric. We are quite at the loss to give a reason why one plant alone among many others growing in like conditions should assume this appearance.

PROLIFEROUS APPLE.—Messrs. PROCTOR & SON, of Chesterfield, send us a small Apple, grafted in the spring of the year. From the graft proceed two or three leaf-bearing shoots of the ordinary character, together with a fruit-stalk bearing a small Apple, from whose centre grows out another leaf-bearing shoot. Among the very numerous specimens of prolific Apples that have passed through our hands, we have never seen one precisely like this.

UNIVERSITY COLLEGE, LONDON.—Professor F. W. OLIVER, D.Sc., delivered at University College, Gower Street, this week, a lecture introductory to the work of the session 1900. 1901 in the faculties of arts and laws and of science. Professor CAREY FOSTER, principal of the college, presided, and there was a large attendance of ladies and gentlemen. Professor OLIVER offered on behalf of the staff their hearty greetings to new and old students and to Professor CAREY FOSTER, who came back with the title of Principal to give them the advantage of his ripe judgment in the work of the college. The lecturer went on to deal with the progress that had been made in the science of botany, and said the country was becoming alive to the disadvantages of defective education which, in the matter of the army, had been brought home to them at the present day. The founding of a university there could not in the long run fail to increase the facilities for study in botany as in other subjects. They might expect to have in London, at a not very distant time, a botanical institute such as existed in certain other university towns. The site for such a botanical institute must evidently be the site of the Royal Botanic Gardens at Regent's Park. The Royal Botanic Society held its gardens on a lease from the Crown on very easy terms, and not long ago the gardens might have been obtained for purely scientific purposes, but latterly the illuminated fêtes, the decorated donkey-chaise, the maypole, and the pastoral play had engrossed much of the Society's attention, and the gardens had become a kind of modern Ranelagh. A small portion of the ground certainly had been set aside for the cultivation of medicinal and economic plants, but the garden did not occupy the place it should as a botanical garden for the neighbouring colleges. The opportunity of acquiring the ground had now passed away, and the Crown had unconditionally renewed, or undertaken to renew, the lease for a long term of years, but he did not think that the Royal Botanic Society would refuse to entertain any well-devised plan put forward by the colleges. In addition to lecture-rooms and laboratories at the institute, there should be ample place for the museum and collections, and around the institute should be reserved three or four acres of ground for the use of the colleges as their botanic gardens. Suitable class-rooms should be erected, and frequent visits to the gardens be encouraged among the students. The country was expecting in the near future the reorganisation of the Army and of the Army Reserve on modern lines, and he advocated that the soldiers should be trained in forestry. There was plenty of room in this country for an efficient school of forestry, and, as there threatened to be a timber famine shortly, it was of national importance that the matter should be studied and dealt with by the State. *Times*.

THE HENDRE, MONMOUTH.

[SEE SUPPLEMENTARY ILLUSTRATION]

THE seat of Lord Llangattock is one of those charming gardens of which the gardening public see and hear but little. The mansion and gardens are situated in a lovely undulating deer park, about four miles from the historic town of Monmouth. This quaint town has a sort of old world look about it, with its ancient buildings and traditions, that seems to convey the impression that the business of the town flourished better in days far back, than it does in this nineteenth century.

Before entering the park, at the commencement of July, I came in view of a large block of modern farm-buildings, erected for the purpose of breeding and rearing of pedigree Shire horses. Specimens from this noted stud enable Lord Llangattock to take leading positions at the Royal Agricultural and other shows.

Next are some very handsome entrance gates and lodge, the commencement of a new carriage drive, skilfully designed and carried out by Mr. Milner, the celebrated landscape artist. The new drive is some 3 miles in length, and sweeps along through some charming and varied sylvan scenery, with easy, graceful, curves and gradients; and there is a little stream winding along in the dingle below. Some very effective planting has been done here with choice specimen Conifers, also large irregular groups of hardy flowering shrubs, such as *Rhododendron*, *Azalea*, *Laburnum*, coloured Thorns, Broom, *Guedres Rose*, *Lilac*, &c., in conjunction with the older groves of Beech, Oak, Silver Birch, Chestnut, and other forest trees that have been judiciously thinned out.

In the excavations here and there, pieces of natural rock have been allowed to project through the surface-slope of the banks, and are very effective, appearing above the St. John's Wort and the common Brake-Fern. Messrs. Pulham have also been entrusted to add to the above some of their celebrated rock-work, and so well has it been done that it is difficult to distinguish the real from the artificial—that at the lake end being specially good.

The park is well wooded, and has been greatly extended by the present Lord Llangattock. Under his lordship's own personal supervision, judicious openings and thinnings have been made in the woodlands from time to time, showing graceful, informal outlines; whilst long, irregular vistas of the distant landscape, in connection with the beautifully-undulating surface, have been most cleverly brought out. As one passes along, these beautiful effects keep changing.

There are no boundary lines or fences to be seen; it is not often one finds workmen's cottages protruding in park scenery, but as there are some here presented in old English, timbered black and white, they really look very picturesque, nestling among the foliage of forest trees, quite worthy of their position.

The flower-gardens and pleasure-grounds have been laid out with taste; the former is on a series of terraces on grass.

I noticed, in addition to beds of usual summer flowers, a series of beds of *Erica carnea*, and coloured gravel paths, but had previously hoped I had seen the last of coloured gravel gardening. Another flower-garden has a somewhat peculiar design—Yew hedges about 3 feet high, planted in disconnected, various-sized right angles, each angle thus formed being planted with tall, hardy herbaceous plants, to flower late in the season, such as *Rudbeckias*, *Pyrethrums*, *Phlox*, *Pentstemons*, *Michaelmas Daisies*, *Anemone japonica*, &c.

On the west side of the flower-garden there is a formal semicircular row of erect-growing Cypress, which I think spoils an otherwise beautiful landscape.

There is also a little topiary work, which may be in character with old mansions of historic fame, but in which I fail to see any beauty. *Pseudotsuga Douglasii* is an extra fine specimen, fully 70 feet high and about 35 feet through. *Thuja gigantea*, *Cupressus Lawsoni*, *C. gracilis glauca*, *Thujopsis*

borealis, and other coniferous trees are well represented by fine specimens; also *Taxodium sempervirens*, and several *Retinosporas*.

The finest specimen of *Tilia argentea pendula* (or, rectly speaking, *Tilia petiolaris*), is growing luxuriantly, so is one of the best variegated forms of *Acer pseudo-platanus alba variegatus* that I have ever seen. There is also on the lawn a grand specimen of that rare Ash, *Fraxinus parvifolia*, fully 40 feet high.

I next saw a small lake, where *Nymphaea odorata* and other water-plants flourish, whilst on an island there are two graceful Weeping Willows. Hardy Bamboos and Water-sedges are very effective on the edges of the lake.

Continuing, I noticed a fine collection of hardy flowering shrubs, *Cistus villosus* being one mass of charming white flowers; *Rhododendrons*, *Philadelphus*, *Spiraeas*, and *Azaleas*, were very fine. The Golden Yew was at its brightest gold, and completely killed the colour of its companion, *Cornus Spathi*. The higher study of art required to effectively carry out the modern system of gradation of shades of colour in perfect harmony, of living shrubs and plants in masses, is not yet always a success.

FRUIT CULTIVATION, &c.

The Hendre gardens have long been famous for high-class fruit cultivation, and Mr. Coomber is a past-master in his profession, as recent awards by the Royal Horticultural Society have fully testified. In October last, a Gold Medal was awarded his collection of Apples and Pears; also a Silver-gilt Knightian Medal during this summer for a collection of thirteen Pineapples.

In the *Gardeners' Chronicle*, August 18, p. 131, an illustration appeared which showed a marvellous crop of Peaches in a house, and I saw other houses in which the trees all carried excellent crops of fruit. Several vineries contained good successional crops of the most useful sized bunches of good Grapes. I thought Lady Hutt, inarched on to Foster's Seedling, much improved by the union. Appley Towers and Gros Maroc also had been inarched on to Madresfield Court, but this I considered putting "the beggar on to the gentleman."

Four houses are devoted to the culture of Pineapples; two houses for the Queen or summer section, and two for Smooth Cayenne and C. Rothschild.

Melons are also a strong feature, Hendre Seedling and Blenheim Orange only are grown. Curiously, these two Melons were brought out at the same show at South Kensington, in May, 1880, the latter obtaining a First-class Certificate, Royal Horticultural Society, in September of the same year.

Negro Largo is the favourite Fig grown on the one good crop system, in restricted borders.

There are special houses for Strawberry-forcing, Tomatos, Roses, Carnations, Ferns, Orchids, also for the usual varieties of stove and greenhouse plants, large numbers of winter-flowering plants being required for decorative purposes in the mansion.

On the outside walls I observed a quantity of healthy cordon-Pears, carrying good crops of leading varieties of Pears, chiefly on the Quince stock. Peaches and Nectarines were full of healthy-looking fruit in variety.

The kitchen garden is somewhat small, and necessitates close cropping. The staple soil is a reddish marl, apparently well suited for Peas, as there were some very fine rows of the varieties Autocrat, Sturdy, Duchess of Albany, and others.

The hardy fruit garden proper is situated some distance away on a specially selected site at a high elevation, sheltered by trees from the north and east, and sloping to S.W., with natural drainage.

The Gooseberry, Currant, and Cherry quarter measures 100 yards by 50 yards, and is completely and permanently netted in by iron galvanized wire fixed to iron tube standards, as an efficient protection from birds. This arrangement, Mr. Coomber

informed me, was the only course open to him in order to circumvent the ravages of birds, and to always secure good crops of these fruits, the first cost was soon repaid.

Alongside was a large plantation of Apples, Pears, and Plums, grown as open bushes, planted 12 feet apart, all ways, and a finer or better managed lot of trees, it has never been my good fortune to witness.

Amongst Plums, Czar, Early Prolific, Transparent Gage, Monarch, Pond's Seedling, and Denniston's Superb, were very heavily laden with fruits.

Apples and Pears, in leading varieties, were in the best of health, and carrying good crops. Spraying is diligently attended to, and insects have no quarter at The Hendre. Root-pruning is also practised in these gardens. *W. Crump, V.M.H.*

YUCCA GLORIOSA.

In the hardy Yuccas, we have most effective flowering-plants for a town or country garden, and *Y. gloriosa* is one of the most handsome. We have a photograph upon our table which pictures the species in full flower in a small, over-shadowed back garden in London, and it appears perfectly happy. But the photo reproduced in fig. 77, p. 263, was taken in Lord Ilchester's garden, at Abbotsbury Castle, Dorsetshire, where the conditions are most opposite to those described above, and where the plants, which it will be seen, are interspersed with other flowering plants in a very large bed, have everything in their favour. Our readers may judge how well they merit such little attention as is needed to cultivate them successfully. In Lord Ilchester's garden, *Y. gloriosa* produces flower-stems 15 feet in height.

THE WEATHER IN WEST HERTS.

THE night temperatures have again been very variable during the past week, while the days continued, as a rule, warm. On several occasions frosts threatened, but on no night did the exposed thermometer descend quite so low as the freezing-point. The soil is now at about a seasonable temperature at 1 foot deep, but about 2° warmer than the average at 2 feet deep. Rain has fallen on four of the last eight days to the total depth of nearly three quarters of an inch—not sufficient after the previous spell of dry weather to affect either of the percolation gauges. The sun shone on an average for 4½ hours a day, which may be regarded as a capital record for the time of year.

SEPTEMBER.

This was a warm, dry, calm, and sunny September. Taken as a whole, the temperature was only about 1 degree in excess of the average for the month. The fact is, although there occurred no fewer than twenty-five warm days, the nights proved as a rule, on the other hand, unseasonably cold. On eight of these nights the thermometer exposed on the lawn fell to within 4 degrees of the freezing point, but at no time below that point. So that, although the nights were cold generally, the extreme minimum registered by that thermometer was unusually high for the month. One other feature as regards temperature is also worthy of notice, and that is the great average difference between the lowest night, and highest day readings. Rain fell on only six days, and to the aggregate depth of less than three-quarters of an inch, nearly the whole of which amount was deposited during the last week. As compared with the average quantity for the month, the deficiency was equivalent to over 9½ gallons on each square yard of surface in my garden. Indeed, the total fall was only about a quarter of the mean quantity for the month, and smaller than in any September, with the exception of those of 1865 and 1890, during the past forty-five years. The average rate of movement of the air was less than three miles an hour, making this, with one exception, the calmest September during the last fifteen years. The air was unusually dry, and the sun shone on an average for about five

and a half hours a day, or nearly one hour a day longer than is seasonable. Having now arrived at the end of the summer-half of the drainage year, the following particulars may be of interest. The rainfall of the past six months falls short of the mean for this period by over 3½ inches—equivalent to a loss of nearly 18 gallons on each square yard of surface. Taking the last three summers together, they are the driest in the past forty-five years. Indeed, we seem to be passing through a long series of dry summers (meaning by summers, the six months ending September), for only two of the last eighteen have been at Berkhamsted in any way wet ones, and even in these two the rainfall was only slightly in excess of the average. *E. M., Berkhamsted, October 2, 1900.*

NURSERY NOTES.

MESSRS. SUTTON AND SONS, READING.

THE trials of Tomatos, Beets, Cabbages, &c., are made at the seed farm and trial-grounds situate on the outskirts of the town. These trials are conducted on a large and in a very thorough manner, with definite aims and purposes. An inspection which we had recently the pleasure of making, showed how very necessary such trials are, and must always be, in view of the many so-called novelties brought out, especially of Tomatos, for it is only by means of comparative trials such as these that the real value, if any, of varieties is obtainable.

Then again, there are varieties of vegetables and fruits from abroad, of which the Tomato is an example, which may be excellent in the country of their origin, or which are adapted to the taste of the inhabitants of those countries, but which meet with no commendation here; as is the case with the very small-fruited varieties of this vegetable-fruit. Some of these have been in commerce for more than thirty years, but except as curiosities, scarcely anyone grows them in this country.

At the present time, and until frost destroys the plants, an extensive and most interesting trial of Tomatos and Runner Beans is being conducted at Messrs. Sutton & Son's grounds. There are 320 different parcels of Tomato-plants, set out in rows of ten plants in a row, and the rows standing at 3 feet apart, the plants being thus afforded ample space for full development on the single-stem method. Each is afforded a stake about 4 feet in height, to which it is secured. Some rows consisted of their stock or control varieties, others were such as they supply to their customers, and the remainder consisted of varieties obtained from different sources, both native and foreign, so that the trials are comparative in a high degree; and as similar, or supposed similar, varieties are planted contiguously, comparisons are readily made.

Taking the rows seriatim, the first seven at one end of the plot represent Tomato Earliest-of-All, obtained from various sources. Of these the best fruit have but little corrugation, and the firm hopes in time to obtain smooth and globose fruits; only one variety has remained hitherto obstinately corrugated. A variety a few days later in ripening (a matter not of much consequence to the private gardener, but meaning much to the grower for market), is Mortimer's Winter Beauty, a nice-looking fruit, rather deeper measured from apex to stalk than the first-named, with but few seeds, and very solid flesh. We were told that 1 ton of the fruits only yielded 1 lb. of seed! This variety is very good under glass.

Chiswick red, a once favourite variety, is a characteristic variety; small, and of the shape of a Plum. Early July (Laxton's), is a nice early variety with solid pulp, and almost as early as Earliest-of-All. Sutton's Peerless is a heavy bearing, middle-sized fruit, of a crimson colour, and quite smooth in outline, and a great cropper. Similar to it, is Armitage's Crimson Beauty, with fruits of middle size, and similar to those of Peerless.

Magnum Bonum, one of the best varieties, is reckoned to be the next earliest to Earliest-of-All, excellent for field culture, but not recommended for forcing or cultivation under glass. A good strain of the old Corrugated Red was noted; it is still enquired for, as it crops well, and the seed is cheap.

An American variety named Early Ruby comes into use about the same time as Early Beauty, and the fruit is bigger and slightly ribbed. Princess of Wales, a little taller plant, has rather small fruits, which are more globose than, and comes in use about the same time as Peerless; it is a variety that crops very heavily. A variety which bears a close resemblance to Peerless is Abundance, but it crops less heavily; the first fruits are fit for use at about the same time as those of that variety.

A strain of Main Crop raised from the seeds of

the last named, but the fruits and clusters exceed it in size; it is crimson coloured, and a well flavoured fruit to eat raw. The old Vick's Criterion, an American variety with downy, pink coloured skin, once much in vogue here, was remarked in a row of capitally cropped plants; it has few admirers now, the colour not meeting the popular taste. Sutton's Eclipse is an early form of Perfection, and a good bearer; and the Apple-form of the variety is very good, more especially under glass. The trials of Frogmore Selected seemed to vary a good deal, and the variety will need much more selecting; some of its fruits are globose as in Perfection, and others are of the Apple-shape—it is a good cropper, and ripens off well. Of the fine variety Best-of-All, there were quite a number of rows, but those raised from seeds of the more recent strains of it showed the more perfect form,

off satisfactorily. Yellow Dwarf Gem is of good form, the plant dwarf, and well suited for pot as well as out-of-doors culture. Golden Perfection is one of the largest smooth-fruited varieties, of a yellow colour. Webb's Sovereign seems to bear a great resemblance to Prince of Wales. Toogood's Golden Gem, and Sutton's Golden Nugget greatly resemble each other; and Veitch's Golden Jubilee is like Sutton's Golden Perfection. Quicksure, an American novelty, has rose-coloured fruits, which are ripe at about one and the same time; the plant bears heavily.

BEANS.

There were remarked many trials of the climbing Canadian Wonder French Beans, obtained from a variety of sources, and differing considerably in the strength of the bine, and its ability to climb, and in cropping. Sutton's Tender-and-True appeared



FIG. 77.—YUCCA GLORIOSA, IN LORD ILCHESTER'S GARDEN AT ABBOTSBURY CASTLE, DORSETSHIRE. (SEE P. 262.)

a plant that had been grafted on the Victoria Potato was remarked. The plants of this curious blend are, this year, dwarfer, and the fruits smaller than usual, but the clusters bigger than heretofore—changes due probably to the nature of the season. The true Main Crop has big clusters of flattish globose fruits, some of which come corrugated. It is apparently a very heavy cropper.

A variety named Wonder of Italy, an enormous cropper, is excellent for out-of-door cultivation; The fruit is of about the size of Denniston Superb Plum, and inclined to the Pear shape—in Italy it is used in the dry state as well as fresh, and is found in almost every provision shop and household. The Pear-shaped Tomato was remarked among the trials—it is good for ornamentation; as are also the Currant, the Cluster, and the Cherry varieties. The fruit racemes of the Cluster measures, in many instances, 9 inches in length, and all the fruits on the clusters were ripe; the weight of fruit is considerable, probably would equal that of any of the large-fruited varieties. Sutton's Dessert is like

and bore the most fruit—a capital sample taken in its entirety.

Trophy still holds its own as a great cropper. Of the variety Perfection, there were many trials noted; and Messrs. Sutton state that it is an excellent cropper, but not quite so early as Eclipse, as has been stated, or as Best-of-All. The Peach has downy, pink-coloured fruits, which are borne on long bunches; it bears heavily. Dickson's White Queen is really a pale yellow fruit, which has cropped only moderately this year. Sutton's Sunbeam is a yellow-coloured, egg-shaped fruit, which has very solid flesh, and the verdict as to its cropping is the same as that of the previous variety; it is very distinct. Golden Nugget is the earliest of the yellow-fruited varieties, and is a counterpart of the dessert Tomato. The largest yellow Tomato is Golden Queen, which has slightly corrugated fruits, is a heavy cropper, and is always good out-of-doors; a decided acquisition. Another good cropping yellow-fruited variety is Prince of Wales, which has fruits of middle-size, solid, and ripening

to be under exactly identical conditions, the best of the lot. The variety Excelsior, a sport from Canadian Wonder, differs in leaf and in style of growth from the others, and superficially the seed is similar; but there are differences. The firm appears to possess the finest type of this climbing French Bean that we have hitherto observed.

Of Runner Beans the variety Abundance is a fine early podder, the seeds of which are white, and equally fit for use in the unripe as the ripe state; it has, when young, a long, broad, flat pod. Prize-winner is another large-podded Bean, that continues fit for consumption for a long period of time; the seeds are wholly of a pale purple colour when ripe.

CABBAGES, SAVOYS, &C.

The trials of these may only be alluded to at the present moment, it being yet too early to form opinions about them, excepting perhaps in the case of a few excessively dwarf, early-hearing varieties; the trials are very comprehensive, and cover a large area of land. The same holds good of

Broccoli and Brussels Sprouts. Beetroots form an interesting trial, the varieties including all that are obtainable, and a few very choice ones were remarked.

FLOWERING ANNUALS.

Among some of the best of these now in bloom are dwarf strains of Phlox Drummondii, reaching scarcely 9 inches in height, and 18 inches in diameter, and forming glowing cushions of colour. There are some pretty stellate-flowered varieties not so good for massing or forming lines and borders, but affording choice material for cutting. The taller (1 foot) Phlox Drummondii are as good as the dwarf form, and the range of colour leaves nothing to be desired. Planted at 2 feet apart, these Phloxes more than touch in the course of the season. Gardeners, as a rule, plant Phlox Drummondii much too thickly, and as a consequence, the plants, from lack of light and air, grow tall, and produce most of their blooms at the top of the plants. Except in very poor soils, at the least 1½ foot space should be afforded.

Petunias of a dwarf strain and of the richest tints imaginable were remarked, these being likewise set out at 2 feet apart; the season is, however, nearly over for them. A fine semi-double flowered strain of Hollyhock from America had been very floriferous, and as it is a tall, robust grower, throwing up two and three stems 10 ft. high, and apparently is disease-proof so far, it would take the place of our own varieties; and the flowers being only partially double, they do not suffer in wet weather.

Marguerite-Carnations were being extensively tried, and all the colours we are accustomed to find in border Carnations are reproduced in these; moreover, the forms of the flowers leave little to be desired. The plants are still covered with flowers, and when these are over the plants would rapidly produce another crop if potted up and given glass protection; for cutting purposes these Carnations are invaluable. The varieties come true from seed, which should be sown in early spring.

A Golden Feather (Pyrethrum) was remarked which is very dwarf, has crisped foliage, which never needs clipping or pinching, which never flowers, or scarcely ever. Propagation is by division.

IN THE HOUSES

are numerous Begonias ripening their seed, and amongst them fine strains of single forms in many tints, but chiefly light ones, these being at the present time mostly in favour with buyers. Semi-double and single-flowered crested forms are becoming common, the cresting appearing on the middle area of the petals as in Cyclamens.

Apropos of Begonias, some beds in the open were filled with well-flowered plants of the single varieties, which were raised from seeds sown in January last. The various colours come true from seed. The blooms were generally poised erect on 9-inch stems, and the effect was far superior to that which zonal Pelargoniums afford at this part of the season.

HOME CORRESPONDENCE.

FLOWERING OF PHYLLOSTACHYS NIGRA VAR. PUNCTATA.—This variety of the Black Bamboo is in full flower in the gardens here, and the inflorescence, apart from the plant, to all appearance is dead, the foliage being quite brown. The once graceful sprays, which are fast passing into the seed-stage, now resemble long seed sprays of the perennial Rye-grass, some of the flowers still showing the drooping pollen-covered anthers. The early formed flowers are now more swollen as they approach what I take to be the seeding stage. It would be interesting to know if this variety of *P. nigra* is flowering in other collections, as some species are generally supposed to do. *Bambusa gracilis* (syn. *Thamnochlamys Falconeri*) in the year 1886-87 flowered spontaneously at Cannes, and seedlings germinated freely in a shallow rivulet running through the grounds. This *B. gracilis* died outright I believe in all the gardens where it was grown at that period. To complete the history of

our *P. nigra punctata*, Lord Ilchester purchased it amongst other species from, I believe, M. Latour-Marliac, of Temple-sur-Lot, in 1896. And the present plant in flower is a division taken from this two years ago this month. Its height is only 4 to 5 feet, and quite diminutive in comparison to the height *P. nigra* usually attains to. The finest specimens I have seen of the species were at Villa Girard, St. Hélye, Nice, which were considerably over 25 feet high, and the canes had a girth at the bottom of 3 inches. Contrary to *Arundinaria Simoni*, which continues to live in a degenerative way after flowering, as it does here, annually, I think *P. nigra punctata* will succumb after seeding. *J. Benbow, Abbotsbury Castle Gardens, Dorsetshire.*

THE WEATHER IN NORTH CORNWALL.—The rainfall during September amounted to 2.12 inches; the heaviest fall during twenty-four hours was .59 inch, measured at 9 A.M. on September 2, and there were sixteen rainless days. The barometric pressure has been remarkably even, the lowest reading was 29.40 inches, at 9 P.M. on September 27, and the highest 30.52 inches, at 8 A.M. on the 12th. The temperature as registered by a thermometer, 3 feet from the ground and facing due north, has ranged from a minimum of 35° Fah., on the 5th inst., to a maximum of 78° on the 7th. On only nine occasions have we registered above 70° Fah. Generally speaking, the nights have been cold with very heavy deposits of dew. There has been an absence this month of such winds as proved so disastrous to the Apples and Pears in September last year. *A. C. B., Pencarrow Gardens.*

MONTBRETIAS MILDEWED (see also p. 268).—It has been a wonderful year for mildew on all plants liable to it. Hybrid Crocosmias, Flag-Isrises, Rosas, and Michaelmas Daisies, have suffered especially in my garden. It seems to me to be communicated from one genus to another, though the mildew is very different in character. I give a few facts concerning hybrid Crocosmias. I have grown a large number of varieties of these for many years, and they increase so fast that I transplant them annually, throwing away many bushels of surplus. The mildew, which turns the leaves brown and withered, comes on about the time the flower-buds show. When bad it destroys the flowering, and the corm dies, but it affects the same variety in very different degrees: some kinds, as Montbretia (Tritonia) Pottsii are quite exempt; *M. crocosmiiflora* is nearly exempt; and of the other hybrids, the more they approach the Crocosmia type, the worse they suffer. Many are planted in beds of dwarf Roses, in which the soil has been manured. The Roses have been very much mildewed, and the Montbretias have suffered there worse than anywhere else. One new Rose-bed had new soil—strong loam and marl—but no manure, and here neither the Montbretias nor the Roses have suffered. This is a significant fact, though I should add that the bed is in a different part of the garden from the others. On the south margin of a long Rose-bed which has suffered badly, stands a large shady Apple-tree. Beneath this tree there is a marked diminution of the mildew in proportion as the plants are shaded by the tree. In neglected bits of the garden, where the soil is poor, Montbretias which have accidentally found their way there, grow and flower shabbily, but hardly increase at all, and are absolutely free from mildew. Also, I have been in the habit of burying bunches with the corms a foot or more deep in any soil in sheltered places under trees, as reserves in case of hard frosts. These make luxuriant leaves year after year if not moved, and are absolutely free from mildew, but do not flower. This year the mildew began in exposed places, with the hot suns of July, and the more exposed to sun the more fatal the mildew. I tried applications of sulphate of copper when too late, for though it killed the mildew, it did not restore the leaves or buds to health. I conclude from these observations that manured soil and exposure to hot sun are, at any rate predisposing causes to this mildew. An eastern aspect, giving sun only till 10 o'clock in the day, is, perhaps, the best condition as regards sunshine. A word about the hardiness of these hybrids, which M. Lemoine cannot depend upon at Nancy. It seems to be generally believed that they are absolutely hardy against English winters, at least in the south of England, but in Cheshire the last hard winter—which was, I think, about eight years ago—destroyed large numbers of them left in the open ground. It is so very easy to save a portion of

their rapid increase in open ground, or in pots amongst trees, covered with a foot or two of dry leaves, that I always take this precaution. I have found that if the young shoots are kept quite dry they perish, and the corm does not break again. *C. Wolley Dod, Edge Hall, Malpas.*

PEA SUTTON'S ROYAL JUBILEE.—I am sending a few pods of this Pea, as it appears to be a particularly good variety for late fruiting. The row of plants from which the enclosed pods were taken, was sown on June 12, and they have given a grand crop, the haulm hanging with quantities of fine pods. They came into use about the second week in September, and are giving a succession of good pods. It is the best of the varieties I have fruited at this season. *J. G. Weston, Bessborough, Piltown, Ireland.* [A very fine sample, the pods and Peas being very large, and the flavour excellent. Ed.]

SESSILE AND PEDUNCULATE OAKS.—In reply to a note that appeared on p. 247 about the differences between the two Oaks, I wish to remark that the specimen shown in fig. 62, p. 219, of your paper, was picked near Chatsworth in the middle of August; the acorn is consequently immature, not abortive. The characters I give to distinguish the two Oaks are taken from my own observation, as well as from leading German and French books on forestry. Anyone can recognise the trees by their general appearance. The timbers of the two species cannot, however, generally be distinguished, although when I wrote the paper, I believed that this could be done. I have nothing to add to my remarks about the comparative qualities of the timbers of the two Oaks; one or other of them is the harder and more durable, according to the circumstances of its growth. As to the necessity for growing pedunculate Oak on wet soil, I quote as follows from a new book on forestry, by Boppe, late Director of the forest school at Nancy, and by Jolyet, one of the professors there:—"Le pedunculé exige un sol humide, tout ou moins, frais; les terrains argilo-sablonneux fussent-ils submergés en certaines saisons, lui sont très favorables, c'est par excellence, l'espèce des grandes plaines et des vallées. Au contraire—le Chêne rouvre préfère les collines, les plateaux, les contreforts des montagnes. On ne saurait attacher trop d'importance, dans les travaux de repeuplement, à cette différence fondamentale afin de placer chacune des deux formes dans la station qui lui est propre."* Gayer,† the eminent German sylviculturist, expresses himself in similar terms. The pedunculate Oak will grow on drier soils in coppice with standards, where each tree is isolated, than in a dense forest; but on hillsides, without a very wet subsoil, the sessile is the right tree, and nothing could have been more striking than the failure of the pedunculate Oak, and the success of the sessile Oak in the mountain limestone soils in the Peak district. Mr. Gillanders and Mr. Havelock who noted this fact, as well as myself, besides several other members of the English Arboricultural Society, can testify to its accuracy. On comparatively level ground even a small rainfall will afford a wet sub-soil suitable for the pedunculate Oak; whilst in hilly ground, especially over limestone rock, much of the water of even a heavy rainfall runs off rapidly, or filters down beyond the reach of the roots of trees, that require it so abundantly as this species. As regards the drainage of Oak plantations, I believe that much of the money spent is wasted. Water standing on the soil during the season of rest does no harm to Oaks, and it is only in cases that the water remains during the season of growth that drainage is really required, and then only until the trees have become well-rooted, when they will drain the soil during the growing season by means of their own transpiration. *W. R. Fisher, Cooper's Hill.*

THE SALE OF POISONS AND THE GENERAL ELECTION.—The following is a question which my Society is forwarding to be answered by each candidate at the coming General Election. "Are you prepared to support a Bill in Parliament making it legal that chemical compounds (although containing poisons), which are not for medicinal use nor intended for the preparation of medicine, may be retailed by traders such as agricultural agents,

* *Les Forêts*, Boppe et Jolyet. Paris: J. B. Baillière et Fils, 1900.

† *Der Waldbau*. Paul Parey, Berlin, 1889, pp. —.

seedsmen, nurserymen, corn dealers, iron and hardware dealers, and other tradesmen (including pharmacists), for any trade or technical purpose in original sealed packages as received from the wholesale dealer or manufacturer?" I trust that your readers who are interested in the subject will use their best endeavours to also bring the question to the front. *T. G. Dobbs, 5, Clement's Inn, Strand, W.C.*

GARDENERS AND GARDENING IN SOUTH AFRICA.

—Every town in South Africa has its public gardens. As a rule, these gardens will compare more than favourably with any to be met with elsewhere. This is not to be wondered at when the advantages of the South African climate are taken into consideration. The gardens at Capetown are a revelation as to what South Africa can produce in the way of flowers, though it may surprise many to hear that even there many plants are grown under glass. A visit into one of these conservatories on a warm day is equal to a Turkish bath. In the public gardens, where expense is no object, the staff consists of trustworthy white men under professional gardeners; but in the case of private individuals, where expense has to be considered, the question of labour is a very serious one. In every other branch of industry in Africa labour is plentiful and more than cheap, but in gardening, where care and discrimination are so necessary, it is the exactly opposite. The native cannot be trusted to work amongst valuable plants; so far as the mere labour is concerned he is all-right, but he has a careless way with him, and would do more damage in half an hour, if left to himself, than could be remedied in a month, and white labour is of course very expensive. This is the one drawback. Some years ago a gentleman purchased a large tract of land close to East London, and laid out a nursery. This nursery is now one of the show places of South Africa. This gentleman was seriously handicapped by the labour question, but he solved it in a most ingenious manner. Numbers of young men go up to Johannesburg every year to make a rapid fortune. Ninety per cent. of them as a rule "go broke," and walk back. These men would arrive at the coast ports in a deplorable condition, and many of them applied at the nursery for work. The proprietor saw a way of materially assisting these wanderers, and at the same time benefiting himself, and he took on all who applied at a moderate daily salary. None of these men remained long at the nursery, but that was understood from the first. The men just wanted to pull themselves together, and as soon as they had got together a few pounds, struck off again. So well did this system become known, that it has for long been a common occurrence for men to come out of their way so as to be able to recuperate at the nursery. The proprietor of this nursery is an expert at his business, he has also the assistance of two professional gardeners and a professional seedsman. He keeps a small store on the grounds, where the employes can obtain all they require at cost prices. The hours of work are from daylight to dark, but a man is not compelled to over-exert himself, but is left to use his own discrimination in the matter. The men, however, work well, and the experiment has proved a remarkable success. It is a common sight to see a worn-out tramp walking slowly and painfully down the avenue. It would require an expert physiognomist to recognise the same man when he leaves, after a couple of months' stay on the plantation. A branch of this nursery was established near Johannesburg a few years ago, but it would be hard to say how this has fared lately. There should be good openings for practical gardeners in the Transvaal, once the country is settled, but assistants should not go out there under any circumstances, unless they have sure employment to go to. *D. G. Ricard, London (late of S. Africa).*

THE PURITAN POTATO.—I am much indebted to your correspondent, Mr. A. Hope, for his note respecting this greatly discussed, early Potato. Very recently Mr. Peter Veitch told me that his Exeter firm sent up tubers of the variety to Chiswick, and that it was there awarded a Certificate. That was inexplicable, because no record of such an award was to be found in the Royal Horticultural Society's list of awards to Potatoes and many other things, always available for use by the Fruit Committee. Now we know that the award was not one by that Committee at all, but was made by a small group of judges at the Vegetable Conference of 1889. That explains what before

seemed difficult to understand, as records of the Committee's awards only governed the action of that body. Because some are not of clear intellects I fear, or because wilfully ignorant, there has been great confusion made of the Committee's awards. One writes voluminously about Certificates, another writes only of Awards of Merit; Certificates are not at all under consideration. These are seldom bestowed, and then only on products that are undoubtedly first-class, have great promise of permanency, and cannot be reproduced wholesale yearly from seed, as can Potatoes, Tomatoes, Melons, Peas, and some other things. An Award of Merit may be by many persons regarded as giving undoubted additional pecuniary value to products



FIG. 78.—*STENBERGIA MACRANTHA* = *S. COLCHICIFLORA*.

Awarded a First-class Certificate by the Floral Committee of the Royal Horticultural Society on September 25. See p. 251 in *Gardeners' Chronicle*, September 29; and p. 256 in this issue.

getting such an award. No doubt it is so in the case of new things and of old—more's the pity; still, it cannot be helped. But when such awards are made to old things already in commerce, in which there is no money, then some one makes a row. Yet, after all, an Award of Merit is but a recognition that such a thing has undoubted merit, whether it be young or old. Three marks given to anything, old or new, grown for trial at Chiswick, is an award practically equal to an Award of Merit; but the latter award can only be made by a full quorum of members of a Committee. A great hubbub has been raised over Puritan Potato, and also Beauty of Hebron, and yet both varieties have been proved to be as worthy of such awards as any Potatoes in cultivation. *A. D.*

STOKESIA CYANEA. Observing on p. 248 a note on this plant, I may say that I have long given up all attempts to flower it in the open air, and have accepted statements of its flowering out-of-doors regularly in the South of England with some scepticism, as by lifting it and potting it for the greenhouse, I never before this year persuaded it even to make a bud. This year I noticed a plant in my greenhouse in a pot flowering early in July. I concluded it was an abnormal freak, and on asking my gardener, he told me it had been given to him by a neighbour. I am now absent from home, but on my return will make more particular inquiries from the gardener who gave it to mine. *C. W. Dud, Eidge Hall, Malpas.*

THE AUTUMN SQUILL (*SCILLA AUTUMNALIS*).

—I have recently seen several healthy colonies of this rare plant near Greenwich. This, and my recent find of *Spiranthes aestivalis* at Chislehurst, already recorded in the *Gardeners' Chronicle*, brings two fresh plants into the flora of Kent. *A. D. Webster.*

CARNATION MRS. THOS. W. LAWSON.—Upon looking through some back numbers of the *Gardeners' Chronicle*, which were neglected while holiday-making, I noticed in your issue of September 1, p. 174, some remarks concerning this variety by Mr. Sydenham. The writer says that he flowered this variety in June, and was disappointed with the result—so much so that he does not think it worth growing. I too have flowered this variety in the summer months, but, unlike Mr. Sydenham, I was not disappointed. My experience with the best types of winter-flowering sorts has shown that when allowed to bloom in summer the result is not always equal to the standard obtained when the variety is flowered in winter and spring. We have abundant evidence of this in the well-known *C. Winter Cheer*, which, with me, produces excellent flowers in early spring, but which, if attempted in late autumn, is most disappointing. I had the privilege, I dare to say, to be the first to have any true stock of the above Carnation in Britain, as on April 13, 1899, I had twenty-four blooms cut with long stems delivered to me direct from America; and though having been out ten days, six of which were spent on sea, they arrived in perfect condition. The blooms were undoubtedly large, well-formed (if I must except the "saw-edge," by which your correspondent designates the beautifully fringed-edge), and the perfume delicious. I am sure, if your correspondent had seen the ordinary cardboard-box in which they were packed as I saw it, he would be more than surprised that the blooms arrived in a presentable state; and it speaks volumes for the constitution and lasting habit of the variety that, after having removed a few tiny side-growths which the confinement had forced out, which I was successful in rooting, and the stems shortened, they were displayed in my employer's house to many London friends for over a week afterwards, or, say, seventeen days from the time they were cut from the plant. I think if Mr. Sydenham will flower it in winter, as I mean to do, he will find a use for it other than to illustrate our American cousins' weakness. *J. F. McLeod, Rochester.*

POLYGONUM BALDSCHUANICUM.—I was rather surprised to note that on page 227, a correspondent condemned the above newly-introduced climber as possessing "no particular merit." From the specimens that I have seen I should be inclined to rank it as a valuable garden plant for certain positions. It is of extremely rapid growth, soon covering trellis or arch. One example, planted last year, has entirely enveloped some tall, rough stakes about 8 feet in height, wreathing them with abundant leafage, over which, on swaying shoots the feathery, cream-tinted flower-clusters droop, forming a particularly pleasing garden picture. On a pergola it has also a decorative effect, though possibly it may eventually prove of too rampant growth for such a position. It should be an addition to those flowering climbers which can be utilised for clambering over evergreens, old gnarled tree-trunks, and ruined masonry, such as the stronger-growing of the Clematises, *Tropæolum speciosum*, and others. I understand that it is not readily raised from cuttings, which would account for its present high price. Doubtless, attempts have already been made to propagate it from seed, but I am unaware if such have proved successful. *S. W. F., Devon.*

SOCIETIES.

ROYAL HORTICULTURAL.

THE SHOW OF FRUITS AT THE CRYSTAL PALACE.

(Continued from Supplement, p. 4.)

SEPT. 27, 28, 29.—In our last issue we gave a full report of the competitive classes at this great show, excepting those reserved for nurserymen in Division II. Exhibits from trade growers used to be shown as non-competitive or competitive, and to the former the Council awarded Medals at their discretion. It sometimes happened that a non-competitive exhibit was awarded a medal of superior value to some that were gained by the competitive exhibits, which was thought to be unfair, and it certainly had a tendency to discourage exhibitors from entering the competitive ranks, and so incur the risk of defeat. The arrangements have therefore been amended, and on the recent occasion nurserymen who exhibited fruit entered in classes, for which definite and graduated awards were offered in the shape of medals, or, failing to do so, their collections were not judged, nor given any award.

Exhibitors of fruit grown entirely out-of-doors could enter in one only of three classes, according as they required 48 feet, 32 feet, or 16 feet of 6 feet wide table space. In addition to these, there was a class for orchard-house fruit and trees, the space allowed for same being 32 feet by 6 feet. As a rule, but little effort had been made to give a decorative appearance to the collections.

CLASS NINETEEN.

(FOR SPACE FORTY-EIGHT FEET BY SIX FEET.)

The prizes offered in this class were as follows:—1st, Gold Medal; 2nd, a "Hogg" Medal; 3rd, a Silver-gilt Medal.

The only exhibit was one from Messrs. GEO. BUNYARD & Co., Maidstone, who have won the 1st prize in this class each year since the present series of exhibitions was commenced. The exhibit included 300 choice varieties of fruit, of which 160 were Apples, 100 Pears, and 40 miscellaneous, as Peaches, Nectarines, Plums, Nuts, &c. An imposing trophy gave a characteristic appearance to the collection, and it contained dishes of Apples that develop an extraordinary degree of colour, as Duchess's Favourite, Lady Sudeley, Allington Pippin, Scarlet Pearmain, Sops-in-Wine, and Cox's Orange Pippin. All the fruits were of exceeding high quality, and the varieties were arranged with a view to giving a good effect. Particularly noticeable amongst the Apples were Lord Suffield, King of the Pippins, Duchess of Oldenburgh, Golden Spire, Waltham Abbey Seedling, Gascoigne's Scarlet, Jas. Grieve, the now popular Bismarck, Queen, Ecklinville Seedling, Lord Derby, Mother, Pott's Seedling, Warner's King, Golden Noble, Beauty of Kent, Stone's, Herefordshire Beefing, Blenheim Orange, Worcester Pearmain, Allington Pippin, &c. Amongst a splendid collection of Pears, we made note of beautiful specimens of Doyenné Boussoch, Pitmaston Duchess, Dr. Jules Guyot, Marguerite Marillat, Beurré Jean Van Geert, Doyenné du Comice, and a striped form of this; Louise Bonne of Jersey, Fondante de Thiriot, Emile d'Heyst, Beurré Superfin, Beurré Fouquieray, &c.

CLASS TWENTY.

(THIRTY-TWO FEET BY SIX FEET.)

The 1st prize offered in this class was a "Hogg" Medal. 2nd, Silver-gilt Knightian; and 3rd, Silver-gilt Banksian. There were as many as five entries in this class, and the highest award offered was won by Mr. J. BASHAM, Bassaleg, Newport, Mon., who had a first-class collection of very highly-developed fruits. The exhibit was relieved by a trophy on which were shelves where some of the more attractive fruits were displayed. Among the Apples were superb examples of Ribston Pippin, Lane's Prince Albert, Duchess of Gloucester, Newton Wonder, Rosemary Russet, Gascoigne's Scarlet Seedling, Belle de Pontoise, Cox's Orange Pippin, &c. Of Pears, some of the more remarkable were Marguerite Marillat, Pitmaston Duchess, Beurré Hardy, Beurré Clairgeau, Mabbot's Pearmain, Doyenné du Comice, and others. The fruit from this exhibitor was large and of very superior quality, testifying to the suitability of this district of Monmouthshire for the cultivation of hardy fruits.

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, Sussex, obtained 2nd prize in this class, that of a Silver-gilt Knightian Medal. Apples were the feature of their exhibit, and they were large in size, and of good colour. Some of the more noteworthy were Worcester Pearmain, Ross Nonpareil, Pott's Seedling, Ribston Pippin, Newton Wonder, Peasgood's Nonsuch, Cox's Orange Pippin, and Colonel Vaughan. Pears were also represented in considerable varieties, and they included some excellent examples. There were some dishes of Plums and miscellaneous fruits, but Apples and Pears formed the attractive portion of the exhibit.

The 3rd prize, a Silver-gilt Banksian Medal, was won by Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., whose very commendable exhibit included 170 distinct varieties of fruits. We noticed fine examples of the new dessert Apple, King Harry, and Bowhill Pippin; of Lord Grosvenor, Baumann's Red Reinette, Stone's, Bismarck, Emperor Alexander, Washington, Golden Noble, Grenadier, &c. Of Pears, there were many varieties in excellent condition. A few dishes of miscellaneous fruits completed the exhibit, the effect of which was increased by a well-devised trophy.

Messrs. PAUL & SON, the Old Nurseries, Cheshunt, had a fine collection of Apples and Pears, and a few Plums, also St. Joseph Strawberry, fruiting in pots. Of Apples we noticed Peasgood's Nonsuch, Cox's Orange Pippin, Grenadier, Frogmore Prolific, Tom Pott, Duchess of Gloucester, Worcester Pearmain, Cox's Pomona, Lane's Prince Albert, &c.; and of Pears, Doyenné du Comice, Duchesse d'Angoulême, Gratioli, Madame Treve, Louise Bonne of Jersey, &c., all these and many others were pretty examples.

Messrs. SPOONER & SONS, Hounslow Nurseries, Middlesex, had a collection of fruit in which Apples were the best feature. Many of the varieties shown were of large size and good colour, such were Hollandbury, Barchard's Seedling, Striped Beefing, Duchess's Favourite (grandly coloured), Bramley's Seedling, Royal Jubilee, Emperor Alexander, Ribston Pippin, Peasgood's Nonsuch, Worcester Pearmain, &c., were all good. There were dishes of Pears also, and Plums.

CLASS TWENTY-ONE.

(SIXTEEN FEET BY SIX FEET.)

Messrs. J. PEED & SON, Roupell Park Nurseries, West Norwood, London, S.E., won 1st prize, and obtained a Silver-gilt Knightian Medal for a good exhibit of Apples and Pears. Some of the best represented Apples were Chelmsford Wonder, Pott's Seedling, Cellini Pippin, Peasgood's Nonsuch, Bismarck, King of Pippins, Emperor Alexander, Cox's Orange Pippin, Wealthy, Golden Spire, Gascoigne's Scarlet, Warner's King, &c. And of Pears, Durondeau, Beurré Diel, Flemish Beauty, Souvenir du Congrès, Beurré Clairgeau, Brockworth Park, Pitmaston Duchess, Louise Bonne of Jersey, and Marguerite Marillat.

Messrs. G. COOLING & SONS, Bath, who gained a Silver-gilt Banksian Medal, had a collection of fruit in which varieties of Apples and Pears were supplemented by dishes of Peaches, Nectarines, Plums, Nuts, and Medlars, which together made a representative collection of well-known varieties of fruits now ripe.

ORCHARD-HOUSE FRUIT AND TREES.

Messrs. T. RIVERS & SON, Sawbridgeworth, were the only exhibitors in this class, and they had a magnificent collection of fruit-trees, carrying splendid crops of ripe fruits, and also fruits of the highest quality in dishes and baskets. The collection was grouped upon the floor, and well merited the Gold Medal awarded Messrs. RIVERS in respect to it. Among the trees bearing ripe fruits were, of Apples: Cox's Orange Pippin, heartily coloured, almost as highly as those of Duchess of Oldenburgh usually are; Emperor Alexander, and Prince Edward. Of Pears we noticed Louise Bonne of Jersey, Red October, and Conference (Rivers); Of Plums: Rivers' Late Orange, Primate, Monarch, Golden Transparent, President, and Grand Duke; whilst Peaches were represented by Golden Eagle, Princess of Wales, and Robert. The gathered fruits were marvellous specimens, and they represented the choicest varieties of Apples, Pears, Plums, and Peaches, many of them being seedlings raised by the Sawbridgeworth firm. Ribston and Cox's Orange Pippin Apples were matchless; and of Pears, such sorts as Princess (Rivers), Beurré d'Amanlis, Souvenir du Congrès, and Beurré Hardy. Of Peaches there were Golden Eagle, Walburton Admirable, Rivers' Gladstone, Thos. Rivers, and Lady Palmerston; and Plums Primate, President (new), Monarch, Grand Duke, &c. Excellent Grapes were shown of the varieties Gros Maroc, Black Hamburg, and Directeur Tisserand.

NON-COMPETITIVE EXHIBITS.

Messrs. W. HORNE & SON, Perry Hill, Cliffe, near Rochester, exhibited fruits of Apple Charles Ross, a cross by Mr. C. Ross from Peasgood's Nonsuch and Cox's Orange Pippin, and figured in the *Gardeners' Chronicle*, Sept. 30, 1899, p. 259.

Mr. W. TAYLER, Osborn Nursery, Hampton, Middlesex, exhibited part of a Vine with ripe fruits of an American variety of Black Grape, called Brandt, and ripened on a wall out-of-doors; also a number of cut Rose blooms.

A magnificent fruit of the Pine-apple Bracomorensis was sent by Baron N. DE ROTHSCHILD, Hohe Warte, Vienna (gr. Mr. James Roberts). The colour of the fruit was almost scarlet.

From the ROYAL AGRICULTURAL AND HORTICULTURAL SOCIETY OF JERSEY was exhibited a grand collection of fruits, in which Apples and Pears of great size were included; also fine Peaches, Melons, Nectarines, Tomatos, &c. The fruit was staged to the best effect, and the exhibit relieved with pretty Palms and Codiaums.

Messrs. W. CUTBUSH & SON, Highgate Nurseries, London, staged good fruits of Apple Monstrous Incomparable, a culinary variety that was given an Award of Merit by the Fruit Committee of the Royal Horticultural Society on October 18, 1892.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, exhibited a splendid collection of fruits, including examples of 250 varieties, most of which were Apples and Pears. Among the Apples the following varieties were specially worthy remark: Lord Suffield, Warner's King, Allington Pippin, Lane's Prince Albert, Lady Sudeley, Worcester Pearmain, Wealthy, Cellini, Tyler's Kernel, Striped Beefing, Mère de Ménage, Golden Reinette, Lady Henniker, &c. Not less remarkable was the quality of the following Pears: Louise Bonne of Jersey, Beurré Fouquieray, Souvenir du Congrès, Conference, Fertility, Beurré Superfin, Beurré Bachellier, Beurré Backhouse, &c. Messrs. VEITCH also showed the new Grape Prince of Wales, described in our last issue.

Messrs. JAS. VEITCH & SONS showed in addition a very nice lot of Ivies in pots, trained in a manner to form screens 2 to 3 feet wide, and 3 feet high. There were thirty-two plants, and they

represented numerous varieties of green, variegated, and golden-leaved types. An excellent collection of choice Conifers in pots came from the same firm.

Messrs. JOHN LAING & SONS, Forest Hill Nurseries, London, S.E., showed a group of tuberous-rooted Begonias in pots, and others lifted from the open ground and exhibited in baskets. The latter were seedling varieties, and possessed uncommon merit. The same firm had a display of Streptocarpus of their multiflorous strain, and these were much admired; and a collection of hardy flowers, and a group of trees, &c., in pots.

From the Horticultural College, Swanley, Kent, was shown a meritorious collection of hardy fruits, and a large number of bottles containing preserved fruits.

A collection of Ivies in pots was shown by Mr. J. RUSSELL, Richmond Nurseries, Surrey. This group of plants contained all the best varieties in cultivation.

Messrs. T. S. WARE, LTD., Feltham, exhibited Begonia blooms of seedling varieties cut from the open ground. Many of these were of excellent merit, the colours being distinct, and very attractive. The same firm had a collection of hardy flowers.

Messrs. PEED & SON, West Norwood, showed a nice lot of Begonia blooms, single and double-flowered varieties.

Messrs. H. CANNELL & SONS, Swanley, Kent, showed a magnificent group of Cannas in pots; the exhibit was placed at the end of the nave, and was a very showy and beautiful feature. Numerous varieties were represented, and the plants bore strong spikes of blooms.

Messrs. W. WELLS & CO., Earlswood Nurseries, Redhill, Surrey, furnished a table with a good display of Chrysanthemum blooms of the choicest early-flowering varieties.

Messrs. WM. PAUL & SON, Waltham Cross Nursery, Herts, exhibited a very fine collection of cut Roses, which, for the date of season, were as remarkable as they were beautiful; also a fine variety of Salvia splendens called Ruhm von Stuttgart, and similar to S. s. grandiflora; a number of plants in pots made a very bright display of colour.

Roses were shown by Messrs. GEO. COOLING & SONS, Bath; Mr. GEO. PRINCE, Oxford; and Mr. FRANK GANT, Colchester. In all cases a grand lot of blooms of free and continuous-flowering varieties were displayed.

Messrs. COOLING & SONS had a most promising new climbing Tea Rose named E. V. Hermanos. The flowers are apricot colour, with rose shading.

Messrs. J. CHEAL & SONS, Crawley, Sussex, exhibited a fine collection of cut Dahlia blooms, Cactus, Pompon, and single flowers.

Messrs. CLIBRAN & SON, Altrincham, Cheshire, showed a group of plants, representing a good strain of Celosia pyramidalis, and a few plants of rose-coloured Cockscomb.

Messrs. BARR & SONS, King Street, Covent Garden, London, exhibited hardy flowers; as did also Messrs. YOUNG & CO., Stevenage Nurseries, Herts; Mr. M. FRITCHARD, of Christchurch Nurseries, Hants; and Mr. B. LADHAMS, Ltd., Shirley Nurseries, Southampton.

HORTICULTURAL COMPETITIONS AT PARIS EXHIBITION.

At the Horticultural Exhibition, held on September 26, the exhibits were so numerous that it was necessary to stage the fruit in the Great Salle des Fêtes de the Champs de Mars. This vast hall was entirely filled by large contributions from the chief French and from many foreign exhibitors. For instance, two large Liège (Belgian) firms entered; the Union Horticole Liégeoise, 2200 plates of fruit; and the Cercle Royal d'Arboriculture, 1600 plates.

The vegetables shown in the open air on the terrace, between the two glasshouses in the Champs Elysées, were numerous and fine.

Among the plants, one of the greatest successes was achieved by a fine set of novelties staged by l'Etat Indépendant du Congo, the explorations of which association, superintended by M. Lucien Linden, have provided some valuable acquisitions. The jury awarded 1st prize *avec félicitations* to a splendid set, very remarkable for novelty, cultivation, and arrangement, on a sloping bank carpeted with verdure.

Alophila Loubetiana, a splendid Fern, with broad, compact fronds, with gracefully-undulated pinnules, proved a great success. Other plants were: Ficus Eetveldiana, with large oval, almost rounded, very shining leaves; Ficus Luciani, analogous to the last-named, but with leaves rather less large, less rounded, and more erect—further, the leaves are not shining; Dracena Lacourti, a curious dwarf species, with leaves linear, narrow, pointed, very closely set along the stem, and 6 inches long; Dichorisandra Thysiana, Asparagus Duchesni, has long, rather broad and shining cladodes and recumbent branches; Ardisia Branderiana is a dwarf and bushy plant, with leaves crimped at the edges, of a deep metallic green colour; Alophila Baroumba, Pteris Droogmansiana, Cyrtosperma (?) congoensis, which is in appearance like an Amorphophallus, with elegant foliage, and spiny petioles; Coffea robusta, Maranta Liebrechtsiana and Lujaiana, Bamburanta Arnoldiana, like a Bambusa, with the leaves of a Maranta; and many other plants.

In the floral section the Roses were, as usual, superb; the Dahlias more remarkable than before, and the Chrysanthemums beginning to appear; those from MM. VILMORIN, LEMAIRE, and LIONNET, were excellent. The Dahlias from M. NONIN, M. CHARMET of Lyons, M. MOLIN, M. PAULLET, and MM. VILMORIN, were superb. Fine Begonias came from Messrs. VALLERAND BROS., Messrs. BILLIARD & BARRÉ, and especially from M. TALLANDIER, of Nancy, who showed

double *Begonia cristata*, and some fine new varieties with wonderfully full flowers.

M. FRIEHE NITZKE, of Vitry, staged a fine tuft of white and rosy Lilac, having found means to secure these flowers throughout the year.

M. LEON DUVAL, of Versailles, showed plants for market *Cytisus discolor*, and a new *Dracena*, a hybrid between *canadensis* and *linearis*, a plant with rather sparse foliage and high growth.

Among the Orchids, M. AUBREY BELL, of Paris, staged a fine *Cattleya* *x* *Forbes-Messia*, nicely intermediate between its parents; *C. x* *intermedia-superba*; two plants of *C. Parthenia*; *Laelio-Cattleya* *x* *callistoglossa* *Bienana*, very deep in colouring; *L. x* *eximia* *parisensis*, and other good varieties. M. BLET also showed some picked specimens of the *Caladiums* and *Bertolonias* raised by him.

M. MAGNE, a private grower, of Boulogne-sur-Seine, staged a fine group composed of *Vanda Kimballiana* and others, various *Aërides*, *Crotons*, *Begonia Rex*, *Stenoglossa longifolia*, *Miltonia spectabilis* *Moreliana*, and the fine *Cypripedium Georges Magne*, one of the most beautiful of the hybrids of *C. Rothschildianum*.

M. MARON, of Bessy, had, as usual, a fine collection of hybrids, and three very interesting novelties: *Cattleya x Suzanne* (*Eldorado x aurea*), of exquisite colouring, the tube of the lip soft rose, the anterior lobe entirely deep orange-yellow, with a narrow border of rose, and a little red spot on the anterior border; *Laelio-Cattleya nivalis* (*glaucia x intermedia*), with flowers only 2½ inches across, entirely white, with the column rose; and *Cattleya x velutino-bicolor*.

Other pretty arrangements were shown by MM. BERT, RÉGNIER, and BERANKE, who had the old *Dendrobium Lowe*; and by Madame GUSTON, of Marseilles.

The gardens throughout the Exhibition are always well kept with shrubs and flowering plants, renewed according to the season. The fruit trees are superb, and we noticed in the collection of M. PUILLET a Pear-tree blooming for the second time. MM. CROUX & SONS in the shrubberies of the *Champs Elysées* have planted some fine *Rhododendrons*. The nights are now getting colder, and for the last three weeks it has been necessary to heat the houses of *Cousia Remy*, near the *Porte Monumentale*. G. T. G.

THE LOUGHBOROUGH GARDENERS' MUTUAL IMPROVEMENT.

SEPTEMBER 26.—The fourth annual exhibition of hardy fruits, Dahlias, and early autumn flowering *Chrysanthemums* was held in the Drill Hall on the above date, when there was an excellent display of fruit and flowers, contributed solely by members of the Association.

To the right upon entering the hall was a most effective collection of Dahlias, staged by Mr. H. HICKLING, The Old Nurseries, Loughborough, who had also a fine collection of outdoor flowers.

Messrs. J. SMITH & SONS, Derby Road Nurseries, occupied one side of the hall with an exhibit of early-flowering *Chrysanthemums*, also *Cactus*, *Pompon*, and show Dahlias.

Mr. H. PRINCE contributed a collection of *Chrysanthemums* in pots, also a collection of cut flowers of *Chrysanthemums* staged in a most effective manner.

The Hon. Lady BYRON, Thrumpton Hall, Derby (gr., Mr. H. Weeks), staged about twenty varieties of Sweet Peas in distinct colours, arranged with grasses.

The exhibition of hardy fruits included 320 dishes from the following exhibitors, Mrs. PERRY HERRICK, Beau Manor (gr., Mr. McVinish); Right Hon. Lord BELPER, Kingston Hall (gr., Mr. W. English); The Hon. Lady BYRON (gr., Mr. H. Weeks); HUSSEY PACKE, Esq., Prestwold Hall (gr., Mr. D. Roberts); and C. T. PARKER, Esq., Quorn Lodge (gr. Mr. J. Powell). The most conspicuous dishes of Apples were Feasgood's Nonsuch, Warner's King, Bramley's Seedlings, Worcester Pearmain, Ribston Pippin, Stone's, Lane's Prince Albert, Saltmarsh's Queen, Newton Wonder, Annie Elizabeth, &c. The best Pears were Pitmanston Duchess, St. Germain, Doyenné Boussoch, Doyenné du Comice, Durondeau, General Todtleben, Marie Louise, Beurré Diel, Beurré d'Anjou, Passe Colmar, Duchesse de Angoulême, &c. Plums: Washington, Magnum Bonum, Pond's Seedling, Reine Claude de Bay, and Transparent Gage. In addition to the above collections, there were competitive classes, and the Awards were as follows:—

For the Best Collection of Outdoor-grown Fruits in twenty-four dishes, and for the Best Collection of Dahlias.—1st, Messrs. J. SMITH & SONS, The Nurseries, Derby Road.

For the Best Collection of Flowers grown Out-of-doors.—1st, Mr. H. HICKLING.

For the Best Collection of autumn-flowering *Chrysanthemums*.—1st, Messrs. SMITH & SONS.

A collection of twelve Ailsa Craig Onions, contributed by Mr. McVinish, gr. at Beau Manor, were very meritorious, the heaviest weighing at the time of lifting 3½ lb. D. R. F.

ENQUIRY.

Will some reader of the *Gardeners' Chronicle* suggest a design for a Rose-garden? The ground takes the shape of a horse-shoe, and is 18 yards wide at the top or narrow end, 25 yards at the bottom, and 30 yards long. We should like the beds to be of a shape suitable for pillars and arches. Rose.

CHRYSANTHEMUM SHOWS IN THE LONDON PARKS.—We are informed that the annual *Chrysanthemum* shows under the control of the London County Council will be opened on the following dates:—Southwark Park, October 11; Battersea Park and Finsbury Park, October 13; Victoria Park, October 17; and Waterlow Park, October 20. The annual distribution of the surplus plants at the Council's parks will take place on the following dates:—Battersea Park, 24th inst.; Brockwell Park, 16th; Dulwich Park, 17th; Finsbury Park, 18th; Kennington Park, 23rd; Myatt's Fields, 17th; Peckham Rye Park, 17th; Ravenscourt Park, 19th; Southwark Park, 11th; Victoria Embankment Gardens, 17th; Victoria Park, 17th; Waterlow Park, 24th.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period September 23 to September 29, 1900. Height above sea-level 24 feet.

1900.		DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			RAINFALL.	LOWEST TEMPERATURE IN GRASS.
SEPTEMBER 23 TO SEPTEMBER 29.	At 9 A.M.		DAY. Highest.	NIGHT. Lowest.	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.				
	Dry Bulb.							Wet Bulb.			
deg. deg. deg. deg. ins. deg. deg. deg. deg.											
SUN. 23	W.S.W.	59.7	58.0	73.7	52.5	...	50.6	59.4	58.1	51.3	
MON. 24	S.W.	64.1	60.5	69.4	46.9	0.09	58.8	59.6	58.1	36.3	
TUES. 25	W.S.W.	61.9	48.8	62.9	40.2	...	58.1	59.4	58.1	32.3	
WED. 26	W.S.W.	59.6	51.0	61.7	44.3	...	50.6	58.8	58.1	31.1	
THU. 27	S.S.W.	59.0	58.0	65.9	45.1	0.39	57.8	58.8	58.1	53.0	
FRI. 28	S.S.W.	59.2	55.0	66.7	50.2	0.01	57.6	58.3	58.0	40.0	
SAT. 29	W.S.W.	49.8	49.6	65.0	41.5	...	56.3	58.2	58.0	35.5	
MEANS...		...	57.6	54.8	63.6	47.5	0.49	58.1	58.8	58.1	40.0

Remarks.—With the exception of one or two days, the weather during the week has been dull and cool.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending September 29, is furnished from the Meteorological Office:—

"The weather during this period was extremely unsettled and rainy over Ireland and Scotland, and to a lesser degree over all the western parts of England. Over the central, southern and eastern districts of England, however, the conditions (although much less fine than of late), remained mostly fair, and the rain was comparatively slight.

"The temperature continued above the mean in nearly all parts of the kingdom, but was a little below it in Scotland, N. and E. The highest of the maxima were registered on the 23rd, and ranged from 74° in England, S., to 65° in Ireland, N., and to 63° in Scotland, N. The lowest of the minima, which occurred either on the 25th or 26th, varied from 38° in Scotland, E., and England, S., and 34° in Ireland, S., and Scotland, N., to 41° in England, N.E., and to 40° in the Channel Islands.

"The rainfall was again less than the mean in all the English districts, but exceeded it in Ireland and Scotland. In the N. and W. of Scotland the fall was more than three times as great as the normal, and in Scotland, E., and Ireland, N., about twice as great.

"The bright sunshine was deficient in Ireland and Scotland, and just equal to the mean in England, N.E. In all other parts of England, however, there was an excess. The percentage of the possible duration ranged from 53 in the Channel Islands, and 50 in England, S., to between 30 and 26 in Ireland, and 24 and 15 in Scotland."

GARDENING APPOINTMENTS.

MR. HY. CHARMAN, for many years at Broomfield Hall Gardens, Sunningdale, Ascot, as Gardener to G. R. BRYANT, Esq., Purley Hall, Parbury.

MR. E. HOBSON, for the last five years Gardener to W. WALKER, Esq., Sandown Park, Esher, as Gardener to R. NEVILLE, Esq., Q.C., Banstead Place, Banstead, Surrey.

MR. J. WALLER, for the past four years Gardener at The Bourn, Widdow, Herts, as Gardener to the Misses KAY, Thorpe Abbots, Scole, Norfolk.

MR. W. H. WAITE, late Foreman of the Herbaceous and Alpine Department of the Royal Botanic Garden, Edinburgh, as Gardener and Manager to SAMUEL UNDERMYER, Esq., Greystone, Yonkers, New York.

MR. JOHN LAIRD, for the past two years Foreman under Mr. MIDDLE, at Welbeck Abbey, the Duke of Portland's seat in Nottinghamshire, has been appointed Forester to J. P. GAVINNE HAYDON, Esq., Buckland, Breconshire. Mr. LAIRD is the eldest son of Mr. WILLIAM LAIRD, the well-known and highly respected Forester at Fyvie Castle, Aberdeenshire.

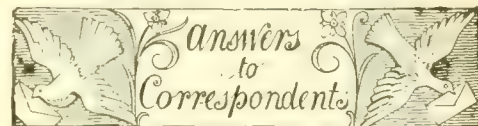
MR. ROBERT RUSSELL, late Gardener to Wm. FRY, Esq., Junr., Wilton House, Ballsbridge, as Gardener to R. TELLIS, Esq., Marlay, Rintarrahan, Co. Dublin.

MR. DAVID TORD, for the last three years Foreman in Burgundy Gardens, Ayrshire, as Gardener to Colonel McCALL, Dalhousie, near Glasgow.

MR. F. RICH, lately in Gatten Park Gardens, as Gardener to R. L. HESKETH, Esq., Ringley Mead, Reigate, Surrey.

MR. SIMMONS, Gardener to the late Dowager Lady HOWARD DE WALDEN, at De Walden House, Eastbourne, for more than eleven years, as Gardener to M. MICHAELIS, Esq., Tandridge Court, Oxted, Surrey. To enter on his duties October 9.

MR. F. BISHOP, late Foreman in Lilford Hall Gardens, Oundle, as Gardener to H. W. VERELST, Esq., Aston Hall, Rotherham, Yorkshire.



APPLE TREE RAISED FROM A SEED: E. G. Woodhouse. Apple-trees raised from seeds should certainly bear fruits, and yours will doubtless do so when Nature impels it. But seedling varieties of plants, including Apple-trees, vary so much in character, and localities differ so greatly in circumstances of soil and climate, that we shall not attempt to answer your second question by saying when it would become fertile if left to itself. You may hurry matters, however, if you wish, by grafting a shoot or two taken from the tree, upon the Paradise-stock so largely used by nurserymen in these days for producing precocious fruit-trees. Your seedling would be very likely to produce fruits the second year after the union.

BEGONIA GLOIRE DE LORRAINE: J. J. W. This pretty and popular fibrous-rooted Begonia is a good winter bloomer; but, as is evident at the exhibitions held from time to time, it is possible to have it in bloom at any and all seasons of the year. The plants you describe are very commendable, and denote excellent cultivation. Do not dry them off, as is done with the tuberous-rooted varieties, but they may be cut down after blooming, and they will make fresh growth from the base, providing that too much water be not given them before growth has recommenced.

CATERPILLAR ON GRAPES: Grape-grower. The Grapes were rotten when examined. The caterpillar you mention is probably that of *Tortrix angustiorana*. See *Gardeners' Chronicle*, n.s., vol. xviii., p. 524. We do not think it is a serious nuisance.

CELERY: W. C. L. The grubs of the Celery-fly, *Tephritis onopordinis* (see fig. 79, p. 268).—R. J., next week.

CORRECTION: In an article on p. 249 in our last issue, it was stated that Apple Allington Pippin should be worked upon the Quince stock. This was so obviously a "slip of the pen," that we think few of our readers would fail to understand that the word "Quince" should have read "Paradise."

DENDROBIUM JOHANNIS: *Lincolns*. We know of no hybrid of that name, but there is a *Dendrobium Johannis*, which is a native of Australia. The plant has hard fleshy leaves, and curious, but not showy, brown flowers, with yellow lip.

EVERGREEN PLANT FOR SLOPING BANK: S. W. We think you could not do better than plant one or more species of *Cotoneaster*. *C. horizontalis* grows from 2 to 3 feet high, and *C. thymifolia* from 1 foot to 1½ foot high.

GRAPES SHRIVELLING: *Anxious Cornishman*. We cannot recall any such paragraph appearing in these pages.

HELIANTHUS DISEASED: J. W. The black bodies studded here and there on the roots and stems of *Helianthus* plants are the resting bodies, or

"sclerotia" of a fungus known as *Sclerotinia sclerotiorum*. The life-history of this fungus suggests the kind of treatment likely to prevent it in the future. The sclerotia lie in the soil or amongst decaying plant-remains till spring, when they produce funnel-shaped structures from which spores are given off. These spores germinate and produce a white mass of filaments, living at first on dead organic matter, but capable of becoming parasitic and attacking the roots or stem-bases of many garden plants, including Sunflower and Artichoke. As the season advances the fungus filaments live on the plant, and finally become aggregated into dark sclerotia, which emerge to the surface, as in the plants you send. Observe that the fungus lives part of its life on dead matter, part on living plants, and that the sclerotia lie in the soil or in plant-remains over winter. This suggests: (1), that quicklime, gaslime, sulphate-of-iron, "Veltha," or some other substance capable of killing the sclerotia, be mixed with soil known to contain them; (2), that all dead stems and vegetable refuse in the garden be burnt; (3), that stable-manure or other decaying matter be kept away from soil where the disease has existed. *W. G. S., Leeds.*

HYBRID ORCHIDS: *Lincolns.* We never neglect an opportunity of giving our readers interested in raising hybrid Orchids, information on the subject. In 1885, we reproduced a lecture on the subject given by Mr. Harry J. Veitch at the Orchid Conference of the Royal Horticultural Society; and in our issue of June 18, 1898, p. 386, we gave in brief, the substance of a lecture delivered by Mr. James O'Brien, dealing more fully with the practical part of the subject. A paper entitled "Curiosities in Orchid Breeding," by Mr. C. C. Hurst, was reproduced in our pages: Jan. 7, 1899, p. 14; Jan. 21, 1899, p. 36; and Jan. 28, 1899, p. 62. The subject being a complex one, we have endeavoured to cull information from all available sources, and whenever we find hybrid Orchids in collections we are visiting with a view to reporting in our columns, we refer specially to some striking points relating to them. Two of the latest instances will be found in our report of the Cambridge Lodge collection, June 16, p. 387, and of that of the Right Hon. Joseph Chamberlain, Sept. 8, pp. 193, 194. If you refer to the indices of the bound volumes of the *Gardeners' Chronicle*, you will be able to gain some information on the subject. For example, Aug. 10, 1895, p. 162, there is a paragraph giving useful instruction on Seedling Orchids. Success seems to depend in a great degree on the suitable surroundings of the newly-sown seeds and young plants, and with these as with some delicate species, the place has to be found by experiment. Perhaps suitable quarters may be found at once, or, on the other hand, several failures may have to be suffered before success is attained. But it is best for the worker by the light of what information he can get, to elaborate and adapt his own arrangements. One of the worst failures we ever saw, was where expensive glass cases with arrangements for bottom-heat, and many appliances were provided, which resulted in killing the seeds as fast as they were sown; and one of the most successful ventures we found in an old, moist, temperate house, where the seeds were either sown on the surface of the soil in which the plants which bore the seeds were contained, or in prepared pans, and in all cases suspended near the glass of the roof. We shall continue to give the subject attention, and shall be pleased to hear of your experiences as you proceed.

MELON DISEASED: *H. H. C.* The leaves received were not in good condition, but we believe the damage is due to a minute fungus which could be detected amongst the dry spots. The spotting and withering of Melon-leaves is known to be caused by several very similar fungi. An American investigator, referring to remedy, says: "Bordeaux Mixture will prove effective when sprayed upon the Vines about once a week;" and "probably all the leaf-diseases can be subdued wholly or in great measure by judicious spraying, and a careful consideration of soil sanitation and rotation of crops."

MELON FRUITS: *Hersal.* We expect the condition you describe is due to the carpels failing, from some cause, to develop as they should, while the outer part, which is really part of the stem, goes on growing; but would prefer to see a specimen before giving a definite opinion.

MONTBRETIA AND IRIS DISEASE: *C. W. D.* The spotting of the Flag Iris-leaves is caused by a fungus (*Heterosporium gracile*), which is abundant on the specimen. The leaf-spots so characteristic of this fungus on Iris, are not shown on the Montbretia, where the disease appears as an irregular, dark-coloured coating of fungus filaments over all parts of the leaf and stems; spores with the same appearance as those on the Iris, and evidently identical, are abundant. It is, therefore, probable that this fungus already recorded on several genera of Iridaceæ, also occurs on Montbretia; see also p. 264.

MOUNTAIN ASH: *T. C. H.* The trees are being bored into by the larvæ of some moth, probably that of the Leopard-moth, which you must kill by thrusting a piece of stout wire up into the gallery made by the insect.

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can consistently with our editorial work, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is often unavoidable. — *G. G. W., Herts.* 1, Lord Suffield; 2, Durondeau; 3, Summer Beurré d'Aremberg; 4, Cox's

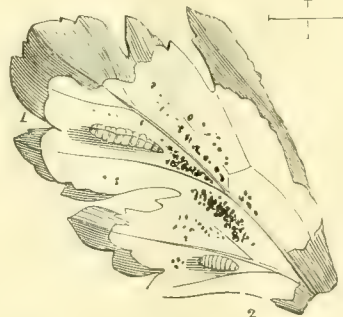


FIG. 79.—GALLERY FLY AND GRUB (TEPHRITID ONOPORDINIS).

Orange Pippin; 5, Domino.—*M. F., Berks.* The Plums arrived in very bad condition; 1, resembles Coe's Golden Drop; 2, resembles Guthrie's Late Gage.—*A. G. B., Notts.* 1 and 2 were smashed; 3, Yellow Damask; 4, Sultan; 5, Tardive de Châlons.—*W. P. 1, Nelson Codlin; 2, Loddington; 3, Keswick Codlin; 4, Potts' Seedling.—H. J. Nonsuch.—J. S. Gloria Mundi. L. E. W., Suffolk.* 1, Yellow Ingestre; 2, White Paradise; 3, Lane's Prince Albert; 4, Court Pendu Plat; 5, Bergamotte Reinette; 6, Forelle.—*J. R. P.* The numbers were loose, and probably have been misplaced; it is so easy to attach a piece of gummed paper to a fruit, that we cannot understand why all do not adopt this method of numbering their fruits, as we have frequently suggested. 1, Beurré Diel; 2, Deux Sœurs; 3, Beurré Superfin; 4, Passe Colmar Musqué; 5, Bergamotte Bufo; 6, Gascoigne's Scarlet Seedling.—*A. B.* We are not certain as to the identity of the Apple sent; please let us have another specimen in a less advanced state. It is quite distinct from Cox's Pomona, and in the case you refer to your specimen may have been very different from that sent to us, or it might have been confused with fruits from another source. It is not probable that any firm of repute would give the name for a sample like that we received. Two specimens should always be sent if there is much variation in form or colour.—*B. C.* The Apple is Evargil.—*Invicta.* Your Peach arrived in too bad condition for determination.—*J. M. S.* We must ask you to send better specimens.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—*W. T.* Specimen

hopelessly withered and broken; obviously a labiate of some sort.—*M. C. T.* 1, *Helianthus decapetalus*; 2, *Allium angulosum*; 3, *Teucrium chamædrys*.—*Knowledge.* *Rubus* species, probably *R. ulmifolius*.—*D. S.* 1, *Helianthus rigidus*, not "Miss Mellish"; 2, *H. multiflorus*; 3 to 5, seem to be *H. doronicoides*, but the specimens are too withered for identification; 6, *Rudbeckia purpurea*.—*R. Blake.* *Tsuga canadensis*.—*Alpine.* 1 and 2, species of *Solidago*; 3 and 4, we do not recognise; 5, *Eurotia Lamarckiana*; 6, *Origanum dictamnus*.—*Skye.* *Cupressus macrocarpa*.—*Justus C.* The female flowers of the Hornbeam, *Carpinus Betulus*.—*A. M.* Send the Asters to some grower; 1, *Helenium autumnale*.—*W. B.* *Sedum carneum variegatum*, *Cattleya Loddigesii* and *Browallia elata*.—*G. C.* Though dissimilar in colour and size, both are varieties of *Gloriosa superba*.—*A. & Son.* Known in gardens as *Pancratium fragrans*.—*Post-mark* "Caterham Valley." *Cotoneaster affinis*.—*H. Law.* 1, *Adiantum elegans*; 2, *A. concinnum latum*; 3, *A. gracillimum*; 4, probably a small *A. gracillimum*; 5 and 6, both forms of *A. cuneatum*; 7, *A. pubescens*; 8, *A. hispidulum*; 9, *A. affine*; 10, *A. formosum*.

ROSE-LEAF: *C. E. P.* We presume the leaf is not from the stock. Ask a Rose-grower to give you leaves of the Manetti and of the Briar. A description would not help you.

SEQUOIA GIGANTEA (WELLINGTONIA): *W. J. S. G.* The result, apparently, of wind, hail, or blows from some hard substance—perhaps hail, as you suggest. The shoots sent are meagre, and indicate the need of top-dressing the roots with rich loam and leaf-mould.

SILVER-LEAF DISEASE IN PEACHES: *P. L. H.* It has never been determined what is the immediate cause of the condition known as "Silver-leaf," but experiments have been made in respect to it, that appear to show that it may be remedied to some extent by affording the trees more iron than is naturally contained in some soils. We do not think it necessary to remove so much soil as was intended, unless you can replace the same with some good loam.

SITUATION IN SOUTH AFRICA: *Intention.* You had better read the letter in our "Home Correspondence" on p. 265, and the note on "Emigration Prospects" on p. 261. When the war has been absolutely completed, you will do well to advertise in this and other journals that circulate in South Africa.

STOCKS: *N. E.* Refer to a good text-book of gardening, such as the new edition of Thompson's *Gardeners' Assistant*. We cannot afford space for detailed descriptions of all the Stocks. We cannot recommend any books in preference to those you mention.

TOMATOS: *Love Apple.* We are not quite sure in the absence of specimens, what the fruits you describe as being in the market had suffered from. Occasionally we have received Tomato-fruits at this Office, which for the most part have coloured and ripened perfectly, but have nevertheless contained some green patches, showing that from some cause or other the development of the fruit has been hindered in such places. The cases you have mentioned may be such as these, or they may be instances of injury from the Black-spot fungus, *Cladosporium Lycopersici*, which in the earliest stages produce a condition similar to that you describe.

TOMATO: *W. H. D.* We do not pretend to attempt to notice all the exhibits at any particular exhibition, even when they are shown by advertisers in our columns! You must remember that the two departments are absolutely distinct. What confidence could the public have in us if it were otherwise?

COMMUNICATIONS RECEIVED.—*W. H. D.*—*W. M.*—*A. C. F.*—*E. C.*—*H. T. M.*—*S. W. F.*—*D. R. W.*—Green Pond, next week—*C. H. P.*—*W. C. & Son*—*W. G. S.*, Leeds—*A. B. R.*—*H. E.*—Max Leichten, please wait a little.—*J. D. R.* The publication of your letter would effect no good.—*R. L. C.*—*A. P.*—*J. P.* & Sons—*D. H. D.* We will write to you shortly.—*C. W. N.*—*F. P.*—*W. K.*—*W. D.*—*A. G.*, Bush Hill (next week)—*J. H. & Son*, Gardener, Secretary, Beckenham Hort. Soc.—*J. R. B.*—*C. T. D.*—*R. M.*—*H. W. Kent*—*P. W.*—*T. W. R.*, Westonbirt—*D. G. P.*—*J. C. Low* (next week)—*Anxious*—*T. R.*—*T. H.*—*H. C.*—*X.*—*W. M.*—*A. G.*—*J. B. S.*—*W. P.*—*C. B.*—*J. S.*

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—*A. C. F.*

(For Markets, see p. xi.)



THE HENDRE, MONMOUTH, THE SEAT OF LORD LLANGATTOCK.



THE

Gardeners' Chronicle

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View in the Grounds at The Hendre, Monmouth, the seat of Lord Langattock. (Supplement.)

WELBECK ABBEY.

HAVING visited the gardens at Welbeck Abbey recently, some impressions made by that visit may be of interest to some readers of the *Gardeners' Chronicle*, and help to explain the remarks the Duke of Portland made to the guests assembled at the last annual dinner of the Gardeners' Royal Benevolent Institution. In what was doubtless intended as an allusion to the extraordinary extent of his gardens, the Duke confessed to Welbeck being of the nature of a white elephant to him. But he added quickly, that although not so long ago it was a wilderness, thanks to the energy of his present gardener, Welbeck promised very soon to become a thing of beauty for ever. It is because the gardens are at present being very considerably modified in many respects, that it will be convenient to defer a description of them in greater detail until a future occasion.

The greater part of the drive from Worksop is a very pleasant one, and of a character that seems to prepare one to enter a place of unusual magnificence.

But upon reaching the park gates the pleasure of the drive has quite ended, for the late duke built a wonderful tunnel at colossal expense, under the drive from this point up to the Abbey. It was a tremendous task, and it has substituted a long dreary drive through a draughty tunnel, for one through a picturesque park, where the sunshine and the birds may be

enjoyed, and where trees and shrubs of differing form and hue may be seen at every step. And there is little choice in the matter. If the visitor has a vehicle and wishes to proceed to the Abbey by the shortest route, then he must suffer the discomforts of the tunnel, otherwise he has two alternatives, to get out and walk, or proceed by means of the vehicle along a more or less circuitous route. While writing of this tunnel it may be mentioned that there are several others upon the estate, notably one leading from the Abbey to the Riding-school, and possibly more than a mile long.

Arriving in the vicinity of the Abbey one is amazed to see so many magnificent buildings in the park. Welbeck is a village unto itself, and in the park are most of the institutions a village may possess. The park itself is said to be ten miles in circumference, and there are upwards of eighty lodges upon the estate. A workman's club, canteen, a post-office, policemen, and a school for the children of tenants and workmen. There are all these in Welbeck Park, and the hunting-stables themselves cover one acre of ground; but in addition there is the magnificent and spacious riding-school, the centre aisle of which is roofed with glass; and the famous tannery. All the lodges on the estate, as well as the more imposing buildings, have been built with fine Streetley stone.

The late Duke, if he caused to be done much work that was uncalled for, did nevertheless provide Welbeck with such permanent features as must for some time to come make it one of the most important estates in this country. The pleasure grounds are of great extent, the grass upon the lawns being cut with steam mowing machines; but as the noble proprietor, and Mr. J. Roberts, his gardener, are at present engaged in making these more pleasing, I need only describe such general impressions as are likely to be made upon the visitor.

The Abbey itself is situate almost at the extreme south of the pleasure grounds. From the south front there has been a broad stretch of greensward, and a cricket ground, beyond which the unkept ground of the park rises, and some of the immense Oaks are growing, for which Welbeck is renowned. But in the future this south front may be made more interesting by the formation of some style of garden near to the Abbey, and by the inclusion of part of the park with the pleasure grounds.

It is upon this side that the Abbey suffered most injury from the unfortunate fire that occurred at Welbeck a few days ago.

At the south-east corner, the view obtained is a glorious one. There is the huge lake resembling a river, that disappears among the trees and extends to Clumber, 3 miles distant. The lake and its outlines are of bold conception, and very effective. On the east side of the Abbey there are two terraces, and the lawn slopes down to the lake. On the lower terrace there have been made beds of various designs, but we believe some alteration of them is intended. There is a very charming fountain, and figures representing the heads of Lady Victoria and the Marquis of Titchfield, the present Duchess's children; also an interesting boat-house, the roof of which affords a rink for roller-skating.

From the west side of the Abbey there proceeds a very wide drive, flanked by beds of Portugal Laurels, which the present gardener has cut down almost to their base; and young Yew-trees and Conifers have been interspersed among them. If the visitor follows this path from the Abbey, he will presently come to the

bachelor's garden on the left side of the path; it is a round, sunken area of two acres, ten feet below the ground-level, and all of the ground was excavated to form this. It is surrounded by walls, and over the walls is a hedge of Yew; under the wall runs a well-kept herbaceous border, containing choice flowering plants.

In the centre of the garden cut in the lawn, there is a large number of beds filled with Rose-trees, generally one variety in each, and grouped around a handsome globe sundial. Rose-trees and Magnolias also grow on walls in recesses, and the outer walls are covered with Ivy, which is closely cut-in each season. From this sunken garden there is a glass corridor 140 yards long, which is connected with the tunnel leading from the riding-school to the Abbey. In the glass corridor Roses are growing in great tubs, placed at short intervals along the whole length.

On the same side of the Abbey there is another broad path, which passes by the chapel, the copper tiles of which glisten brightly in the sunshine and the library. This path runs through closely-mown lawns, behind which are faced shrubberies of pleasing and graceful outlines.

Having briefly described the environs of the Abbey on three of its sides, a little attention must now be given to the remaining one, for it is on the north side that nine-tenths of the pleasure-grounds, and almost all the beautiful avenues and flower gardening, exists. Directly you leave the Abbey you are delighted with the scene; the informal flower beds made by the present gardener are relieved with numerous specimens of choice trees and shrubs. The gravel paths are of great breadth, and through the centre of them are stone-flags, which are certainly less natural looking than ordinary loose gravel, but are more convenient to walk upon. The lake runs along on the right-hand side from the east of the Abbey, and it has been made doubly interesting by the naturalisation of Nuphars and Nymphaeas, and by planting along its side a variety of suitable species of semi-aquatic plants.

In these pleasure-grounds there is not wanting variety, for there are herbaceous borders, groups of shrubs, specimen trees of Conifers, and especially of the Weeping Ash, and ordinary Beech, purple Beech, and white and red-flowering Horse-Chestnut. Rhododendrons there are in abundance, growing perfectly in a sort of valley leading back to the Abbey. But the natural soil of the gardens is not very suitable to Rhododendrons, and most of them were afforded a fresh rooting medium at the time of planting. There are numbers of avenues of different species of trees, with grass-walks between them, and one of the most important of these follows the track of the underground tunnel already described. It is a triple avenue, the back row consisting of *Thuja gigantea*, the second bushy Yews, and in the front the golden form of *Retinospora obtusa*.

But in order to form an idea of Welbeck from a gardener's point of view, it is necessary to know something of—

THE KITCHEN GARDEN.

Its enormous area covers 32 acres, and most of it lies together, and provides sites for the glasshouses. But the garden is separated by good brick walls into three divisions, one of which is more or less devoted to the cultivation of fruit trees. These walls afford a very great amount of space for the protection of such fruits as Peaches, Nectarines, Apricots and Pears.

During the last few years there have been planted some nice young Apple and Pear-trees by the sides of the principal walks, and these with some older ones will be sure to give good crops of fruit for some years to come. There are many others, however, that are comparatively worthless, and have the appearance of having been cut into pyramids with hedge-shears, being as thick with growths as pyramidal Holly-trees. One of the principal features in the kitchen-garden is a great fruit-tree arch, 240 yards long. It runs from east to west, and as a consequence one side, the south side, is very much more fruitful than the other. The cultivated ground is of great extent, and provides unusually large breadths for the kitchen-garden crops.

THE GLASS HOUSES.

There are few, if any, private establishments that have so many and so large glass-houses as there are at Welbeck. The gardeners' cottage is surrounded by such structures, that stand in lines to right and left of it. To the right of the cottage there is a large, wide span-roofed house just under 100 yards long, having three divisions, the centre one affording a house for the cultivation of stove species of plants, and the divisions at either end for the growth of greenhouse species. Another such range runs parallel, and the divisions at either end of this are devoted to Carnation culture. In one of these there were 1,500 plants of *Souvenir de la Malmaison* varieties, and in another plants of "tree" varieties. Next we saw a long glass case against a wall, some 90 yards long and 3 yards wide, in which Figs and Peaches are grown, and Strawberries forced. Near to this a house of pot Vines has ripened a splendid crop of fruit this season, the varieties being Black Hamburgh and Foster's Seedling. A very large vinery having four divisions is close to the one just mentioned, and there are numerous other vineries of which we shall be unable to speak in detail, but several of them have been replanted recently, and the Vines are doing well.

Of the Peach-houses, we were particularly impressed by the appearance of the trees in two that were planted in 1896. The varieties are Hale's Early and Early Rivers, and they have borne a magnificent crop of fruits this season. Then there is a Peach and Nectarine-case nearly a quarter of a mile in length, the glass front to the wall being bow-shaped, and reaching to the ground-level. Another one-quarter-mile case with straight front contains Apricot-trees, amongst which are a few Peach and Plum-trees. Thus these two houses have nearly one-half-mile of fruit-trees under glass. I have only referred to some of the plant-houses around Mr. Roberts' cottage, but it should be stated that there are others, more or less duplicates of those mentioned, and of the same huge proportions. There are also several very large conservatories, and one or two glasshouses of some importance in the pleasure-grounds. Besides these, there are numerous pits suitable for Tomato and Cucumber-culture, several underground plant-houses, and many frames.

Thus Welbeck is so extensive a garden that its maintenance in proper order necessitates a great amount of labour and responsibility, and the Duke, as we have seen, is apt to think he would be just as well off were it not quite so large. By the gardener upon whose direction the work of the different departments depends, the responsibility must be felt no less acutely; but there are grounds

for believing that with the liberal support of the Duke of Portland, there will be effected a general improvement in the condition of the place during the coming years.

Its unusual proportions, the magnificence of its Abbey (unhappily for the moment disfigured by fire), and the grandeur of its many permanent features, are reasons why Welbeck should be developed fully, and be maintained to a degree of excellence that may be a pattern to smaller establishments. *R. H. P.*

ORCHID NOTES AND GLEANINGS.

LÆLIO-CATTLEYA × INTERMEDIOCINNABARINA.

THIS hybrid, between *Cattleya intermedia* and *Lælia cinnabarina*, has been flowered by Mr. Fred. J. Thorne, gr. to Major Joicey, Sunningdale Park, Berks. It may be likened to *L.-C. × intermediiflora*, except that it is of stronger habit and bears larger flowers, which are 4 inches across. The sepals and petals are about half an inch wide, white, slightly shaded with yellow, and tinged with rose colour at the base. The lip has the side lobes folded over the column, and is white, with a primrose shade at the tips. The middle lobe of the lip has an undulated margin, and is streaked and tinged with rose colour, the tint varying slightly in all the four flowers of the inflorescence. It is a pretty hybrid, and its flowers are of firm substance, and would last good a considerable time. *J. O'B.*

LÆLIO-CATTLEYA × VEDASTI.

A flower of this hybrid between *Lælia pumila* and *Cattleya Loddigesii* is sent by Mr. Stafford, gr. to Fred Hardy, Esq., Tyntesfield, Ashton-on-Mersey, who states that it was received as *L.-C. × Aurora* (*L. Dayana* × *C. Loddigesii*), a flower of which, taken from one of the plants raised at Tyntesfield, he also sends. The difference between them is striking, the larger bright purplish-rose flower of *L.-C. × Vedasti*, which is more than 5 inches in breadth, has a yellow disc, the front of a claret-crimson tint, and a form closely resembling that of *Lælia pumila prestantis*, does not exhibit the rugged, raised, purple lines derived from *L. Dayana*, as seen in *L.-C. × Aurora*. The error doubtless arose from the idea that *Lælia Dayana* was a form of *L. pumila*, and assigning the same name to the progeny of those plants which are generally admitted to be distinct species. The flower of *L.-C. × Aurora* now sent differs from those previously sent (*Gardeners' Chronicle*, September 15, p. 202) in the apex of the labellum being white, and the side lobes but slightly tipped with purple.

ABNORMAL CATTLEYA FLOWERS.

The fixity of the abnormal characters in Orchid flowers where it occurs, is tolerably well proved, for we are continually getting evidence that they are repeated in some degree by the same plants year after year; or if occasionally one of them flowers with a normal form, it reverts to the abnormal again. One of the most remarkable instances is that of *Cattleya Mendeli*, imported from a certain district, the plants of which importations produce flowers all more or less defective and abnormal, so that what would be an interesting thing in a single plant becomes annoying when the freak is repeated annually by a number of specimens. But, as if to make amends, the plants of this type occasionally produce flowers of the normal form and of extraordinary beauty, the large crimped labellums being of a bright rose-purple, with fine whitish veining, but such are produced too sparingly to give any compensation for the general display of abortions.

A three-flowered inflorescence and a single flower taken from a plant of *Cattleya Loddigesii* is sent by Mr. Geo. Cragg, gr. to Walter C. Walker, Esq., Percy Lodge, Winchmore Hill, and about which he

remarks, "The plant has flowered each year since it was imported four years ago, and some of the flowers are always deformed, though the plant itself is perfect."

The flowers on the spike have the segments slightly twisted, and the side-lobes of the labellum thrown back, but are as pretty as the normal form. The odd flower has three sepals into which the petals have passed, for they are not visible in the usual position. The lip is twisted aside, and the lobes spread out. The column is about half the usual thickness, the concave side uppermost, and the position of the organs reversed.

It would greatly add to the interest of the subject if seedlings were raised from some of these abnormal forms, in order to see whether the peculiarities are perpetuated in that way, or if further departures from the usual form are thus to be obtained. *J. O'B.*

DENDROBIUM PHALÆNOPSIS SCHRODERIANUM.

Following our remarks accompanying the three illustrations of varieties of this fine Orchid (*Gard. Chron.*, September 29, p. 240), Mr. James Cypher, Queen's Road Nursery, Cheltenham, writes:—"Dendrobium Phalænopsis Schroderianum is one of the best and most satisfactory Orchids we grow. All the forms are beautiful; and as you will see by the accompanying flowers, there is great variety. The large snow-white one, with no other colour than a yellow mark in the throat, is a rare gem. Our method of culture is simple. The plants are grown in comparatively small-sized pans, and suspended near the glass of the roof of a warm house, where a reasonable amount of sunlight is allowed to reach them. They are carefully and not too freely watered until the roots appear at the bases of the young growths, from which time they receive a liberal supply of water, and are syringed twice daily in hot and bright weather. When the growths are matured, and the flower-spikes appear, they receive less water, and after blooming they are still retained in their position near the glass in a fairly warm house, but are kept quite dry until the growing time comes round again. Our plants are repotted every season just before the new growths push. As we manage them, they grow to perfection in any stove-house where Crotons and other decorative plants are grown."

Mr. Cypher sends about two dozen flowers. The fine pure white form is no doubt the best of his flowering this year, though all are fine, and no two are alike. In flowers to be matched tolerably near, so far as the sepals and petals are concerned, the labellums differ widely. One flower is white, with a slight rose-flush over the middles of the petals, the lip being veined with purple. A very large dark flower has all the segments veined with purple on rose-ground, the bases of each division being white. Another has rose purple sepals and petals, and claret-crimson lip with lighter apex. Specimens of the pretty *Compactia macroplectron*, the bright yellow *Epidendrum xanthinum*, and the rare white *Dendrobium aequum* were enclosed. Mr. Cypher remarks that his *Cattleya aurea* has bloomed very well this year, and the *Cypripedium insigne* varieties, including several yellow forms, and the Harefield var., are making a good show.

FOREIGN CORRESPONDENCE.

LUXEMBOURG.

Few tourists stop at Luxembourg—more is the pity, for the city is charmingly picturesque, and full of interest, historical and otherwise, and, what is essential, there is a good hotel! But the great attraction for the horticulturist is the establishment of Messrs. Soupert & Notting, the great Rose growers. Although the time of Roses is past, yet I find it difficult to avoid seeming exaggeration in alluding to this astonishing nursery. That it is very extensive is obvious; but when we come to

details and figures, I am really afraid to quote them, lest the reader should consider them as travellers' tales.

The special features that impressed me were the enormous number—I should like to emphasise that the enormous number of seedling Tea Roses grown for trial or for distribution, as the case may be. The plants are winter-grafted (some of them on *Rosa laxa* as a stock), placed in little pots, and then sunk in beds covered with a mulch, and left till the approach of winter, when they are lifted,

Cochet. I should not have surmised such an origin, but a lady who saw the flower with me, and who has no special knowledge of Roses, at once said, "that is a seedling from *Maréchal Niel*." Whatever its origin, it is a lovely, well-shaped, full-centred flower, pale sulphur-yellow or cream-coloured, with the petals flushed with rose. The buds are elegantly pointed, the wood is red, covered with a glaucous bloom. Other novelties to be sent out this year are *Bebé Leroux*, a white *Polyantha*; *Primula*, with the colour of the

merits of this or that individual Rose. It will have to endure a severe struggle with its competitors, and if prove suitable to its environment, as the scientific slang of the day has it, it will live, otherwise it will more or less speedily find its way to the rubbish-heap. The particular Rose just mentioned has among its other good qualities the faculty of resisting mildew. The late Thomas Rivers—we allude to him whom the Dean of Rochester dubbed "Field Marshal"—was wont to correlate the presence or absence of mildew in Peaches with the



FIG. 80.—TEA ROSE SOUVENIR DE PIERRE NOTTING.

and placed in caves, as will be detailed later on. A large number of these grafted seedlings was still in bloom—far too large a number to allow one who is not an expert to venture to express an opinion as to their relative merits. Messrs. Soupert & Notting themselves are highly eulogistic concerning the merits of a new Rose called *Souvenir de Pierre Notting*, which they are about to send out (see fig. 80). There is no question, from what I saw of it, that it is a very beautiful Rose, and extremely free flowering. It is said to have originated as a cross between *Maréchal Niel* and *Maman*

Chinese Primrose; *Madame Jules Gravereau*, a yellow-flowered Tea from *Rêve d'Or* and Viscountess Folkestone; *Elizabeth Van Reuss*, a white hybrid Tea flushed with rose; *Jeanne Speltinck* × *H. T.*, ivory white; *Madame Mina Barbanson*, rose coloured; *Madame Edmée Metz*, rose-carmine; *Madame J. P. Soupert*, white; *Conrad Strassheim*. Many of these are crosses between *Caroline Testout* and other varieties. But of these novelties we can say nothing from personal observation.

When "novelties" are grown by the tens of thousands, it is impossible to pronounce on the

presence or absence of glands on the leaves, and so with these Roses, it seems highly probable that some correlation exists between the conformation of the wood or foliage and the presence of mildew. And so among these tens of thousands of seedlings one can hardly say there are too many, for one may be suitable for one set of conditions or climate, one for another. Messrs. Soupert & Notting have a large trade with the United States, where the climate is different from our own. Other little Roses were being packed for transmission to Brazil, where the conditions of life are still more widely different.

The soil of this nursery is a sandy loam, overlying rock. Another nursery at a little distance, consecrated to the growth of standards, is on heavier soil. I did not visit this nursery, but its whereabouts was rendered obvious by the occurrence of reddish stripes on the hillside opposite.

But the most astonishing feature of this establishment is the series of underground caves dug out of the rock to a depth of 12 or 14 feet. There are twenty-six *ares* (one *are*=119 square yards) of these caves, which are destined for the reception and protection of the Roses in winter. All those seedlings that I admired above-ground will be placed on shelves in these caves. Still more extraordinary, the standard Roses will be lifted bodily and planted in the soil of these caves, each variety occupying its own compartment, and duly numbered, to facilitate recognition. A few Roses that were left over from last season still remained to show how the plants are packed in these caves. There are occasional openings which admit a modicum of light and air, but frost finds no access to them. Here the plants remain from November till May, when all chance of injury is over. Fortunately, in this country, a light mulch is all that is generally necessary. Messrs. Soupert & Notting grow Roses, and little but Roses, and their establishment, as I have said, caused no little astonishment to the *Rambler*.

THE WEATHER IN WEST HERTS.

SINCE the 5th both the nights and days have been unusually warm, but previous to this there occurred two cold nights, on the colder of which the exposed thermometer showed 3° of frost—the lowest reading as yet of the present autumn. On the warmest night of the week the same thermometer never fell lower than 48°, a high minimum temperature for the time of year. Then again on two days the shade temperature rose to 70°, which is the highest reading recorded here during the last fifteen years so late in the autumn. At the present time the soil is about 4° warmer at 2 feet deep, and nearly 7° warmer at 1 foot deep, than is seasonable.

Rain fell on three days to the total depth of about half-an-inch. On each of the last five days a little rain-water has come through the bare soil gauge, but none as yet through that covered with short grass. Since the month began the duration of bright sunshine has averaged six hours a day, which is between two and three hours a day longer than is usual at this time of year. A selected plant of the wild Ivy came first into blossom on the 7th inst., or later than in any year since 1894. *E. M., Berkhamsted, October 9, 1900.*

SELECTION OF PLANTS FOR THE HERBACEOUS BORDER.

IN giving a selection of choice herbaceous plants that will afford a display during the greater part of the year, I have kept to themselves the names of perennials that grow 2 feet and upwards. Those species that grow tallest should be planted in the back half of the border, and with great care, so that the border may not be given a wall-like appearance. The prettiest effects are obtained where the various colours have been arranged so that they harmonise, and when there exists easy glades and levels of planting. A border planted in this manner will also give a more continuous supply of flowers.

The system of massing or planting in clumps is the best to adopt in cases of tall-growing plants and those of dwarfer habit. The dwarfer plants may vary from 9 inches in height, and may be planted to form half-circles or circles—



The spaces at the rear of the points of contact could be planted with a variety of dwarf evergreen plants, such as mentioned in the third list. These would improve the general appearance of the border during winter, especially if some early-

flowering spring-bedding plants and bulbs were planted in front.

The list which follows includes tall-growing plants. Those marked with an asterisk are intended for grouping in two's or three's, and being gross feeders they are apt to spread rapidly:—

* <i>Acanthus mollis</i>	<i>Eryngium Billardieri</i>
" <i>candelabrum</i>	" <i>Oliverianum superbum</i>
* <i>Althaea ficifolia</i>	* <i>Eulalia japonica</i>
<i>Arundo conspicua</i>	" <i>variegata</i>
<i>Achillea aegyptiaca</i>	* <i>Fernia gigantea</i>
" <i>mongolica</i>	<i>Galega officinalis alba</i>
<i>Aconitum Napellus</i>	<i>Gypsophila paniculata</i>
" <i>pyrenaicum</i>	* <i>Glycerium argenteum</i>
<i>Alstromeria, varietes</i>	" <i>carminum</i>
<i>Anemoneopsis macrophylla</i>	<i>Helenium autumnale</i>
<i>Anemone japonica varietes</i>	* <i>Helianthus, in variety</i>
<i>Anthurium liliastrium giganteum</i>	<i>Hemerocallis, in variety</i>
<i>Aquilegia hybrid spurred var.</i>	* <i>Hollyhocks, in variety</i>
<i>Asphodelus luteus</i>	* <i>Inula glandulosa</i>
" <i>ramosus</i>	" <i>Leichtlini</i>
<i>Asters (perennial), in variety</i>	<i>Iris ochroleuca</i>
<i>Astilbe japonica</i>	<i>Lychnis chalcedonica</i>
" <i>rivularis</i>	<i>Mertensia sibirica</i>
" <i>Thunbergi</i>	<i>Monarda fistulosa</i>
* <i>Bocconia japonica</i>	<i>Paonia arborea, in variety</i>
" <i>microphylla</i>	<i>Papaver bracteatum</i>
* <i>Buphthalmum cordifolium</i>	" <i>orientale "varieties"</i>
" <i>speciosissimum</i>	<i>Pentstemon tubiflorum</i>
<i>Campanula Burghaltii</i>	" <i>Physiolum capensis</i>
" <i>celtidifolia</i>	<i>Polygonatum verticillatum</i>
" <i>glomerata</i>	<i>Polygonum sphaerostachyum</i>
" <i>grandiflora</i>	* <i>Pyrethrum uliginosum</i>
" <i>macrantha</i>	<i>Ranunculus aconitifolius var. plenius</i>
<i>Centaurea macrocephala</i>	* <i>Rudbeckia laciniata</i>
" <i>nervosa</i>	" <i>plena</i>
<i>Chrysanthemum maximum</i>	" <i>Newmani</i>
" <i>Duchess of Abercorn</i>	<i>Scabiosa caucasica</i>
<i>Chrysogonum virginianum</i>	" <i>alba</i>
<i>Cimicifuga davurica</i>	<i>Sidalcea, in variety</i>
" <i>racemosa</i>	<i>Solidago Virga aurea nana</i>
<i>Clematis Davidiana</i>	<i>Statice latifolia</i>
<i>Coreopsis auriculata</i>	<i>Thalictrum aquilegifolium</i>
" <i>grandiflora</i>	<i>Thalictrum coruleum</i>
<i>Crambe cordifolia</i>	<i>Tritoma Burchelli</i>
<i>Delphinium "varieties"</i>	" <i>caulescens</i>
<i>Dictamnus Fraxinella</i>	" <i>Macowani</i>
<i>Digitalis lutea</i>	" <i>Nelsoni</i>
" <i>ferruginea</i>	" <i>nobilis</i>
<i>Echinops Ritro</i>	" <i>glaucescens</i>
" <i>ruthenicus</i>	<i>Veratrum album</i>
" <i>sphaerocephalus</i>	<i>Verbascum olympicum</i>
<i>Epilobium Dodonai</i>	<i>Yucca gloriosa</i>

The *Bocconias* are most ornamental foliage-plants, but their roots should be confined by placing sunken slates around them on edge. *Eulalias*, which are now in flower, are best planted at the end of March when the plumes have been removed. *Glyceriums* should also be planted in spring. *Yucca gloriosa* may be removed now, but it succeeds best if removed in spring.

In the following list I have included only those species that grow about 2 feet in height or less:—

<i>Achillea argentea</i>	<i>Gerbera Jamesoni</i>
<i>Alyssum Wierzbicki</i>	<i>Genm coccineum</i>
<i>Anthemis thictoria var. Kellyi</i>	" <i>plenum</i>
<i>Arabis Halleri</i>	" <i>maximum</i>
<i>Aronicum glaciale</i>	" <i>reptans</i>
<i>Aster Amellus (late and large flowers)</i>	<i>Glacium Fischeri (hybrid Horn Poppy)</i>
<i>Ast agalys argenteus</i>	<i>Hedysarum multijugum</i>
<i>Borago laxiflora</i>	<i>Helenium pumilum</i>
<i>Calandrinia umbellata</i>	" <i>striatum</i>
<i>Campanula elegans</i>	<i>Helianthemum lavendulaefolium</i>
" <i>mirabilis</i>	<i>Helleborus, in variety</i>
" <i>petiiformis</i>	<i>Hemerocallis aurantiaca</i>
" <i>Trachelium alba plena</i>	" <i>major</i>
<i>Carnations, in variety</i>	" <i>Dumortieri</i>
<i>Cheiranthus, in variety</i>	" <i>graminea</i>
<i>Chrysanthemum alpinum</i>	<i>Hepaticas, in variety</i>
<i>Cortusa Mathioli var. grandiflora</i>	<i>Heuchera sanguinea</i>
<i>Cytisus Ardoini</i>	" <i>grandiflora</i>
<i>Daphne Flouiana</i>	<i>Iberis gibraltarica</i>
" <i>Laureola</i>	<i>Incarvillea Delavayi</i>
<i>Dianthus Napoleon III.</i>	<i>Iris sibirica and alba</i>
<i>Dielytra formosa</i>	" <i>stylosa and alba</i>
" <i>spectabilis</i>	<i>Malva moschata</i>
" <i>eximia</i>	" <i>alba</i>
<i>Diets Macleayi</i>	<i>Megasea cordifolia</i>
<i>Dondia Epipactis</i>	<i>Enothera fruticosa</i>
<i>Doronicum plantagineum var. excelsum</i>	" <i>macrocarpa</i>
<i>Dodecatheon, in variety</i>	" <i>taraxacifolia</i>
<i>Dracopcephalum Ruyschianum</i>	<i>Onosma taurica</i>
<i>Edraianthus dalmaticus</i>	<i>Orobis vernus</i>
<i>E. imedums</i>	<i>Phloxes (shrubby) in vars.</i>
<i>Eligeron grandiflorus</i>	<i>Physalis Franchetti</i>
" <i>speciosus</i>	<i>Plumbago Larpetum</i>
" <i>superius</i>	<i>Podophyllum peltatum</i>
<i>Frodium Manescavi</i>	<i>Polemonium coruleum</i>
<i>Erythronium Johnsoni</i>	" <i>var. album</i>
" <i>revolutum</i>	<i>Polygonum Brunonis</i>
<i>Eupatorium ageratoides</i>	<i>Primula farinosa</i>
<i>Fuchsia Fortunei corulea</i>	" <i>glaucescens</i>
" <i>grandiflora</i>	" <i>japonica (very effective in masses)</i>
" <i>undulata variegata</i>	<i>Pyrethrum, double and single varieties</i>
<i>Gentiana Andrewsii</i>	<i>Saponaria splendidissima</i>
" <i>lutea</i>	<i>Spigelia marilandica</i>
<i>Geranium Armenum</i>	<i>Stokesia cyanea</i>
" <i>Eudresii</i>	<i>Thalictrum minus</i>
" <i>ibericum</i>	" <i>rubellum</i>

For an edging to the above collection, *Festuca glauca* and *Ophiopogon japonicum spicatum* are effective in winter and summer. Bulbs also may be planted in holes drilled in the front lines between other plants. There are many varieties of *Narcissus*, and English and Spanish *Iris* that would succeed well in such positions if planted immediately. *Diets Macleayi* needs to be afforded some protection during frost. *Dodecatheons* and other bulbous plants should be marked by permanent stakes, so that the bulbs may not suffer damage from digging when at rest. *Gerbera Jamesoni* is a showy perennial, that should be afforded extra good loam, and in winter some protection. *Incarvillea Delavayi* should be given a mulch of leaf and wood-ashes; plant it in a sunny position.

The following are the names of a few bushes with evergreen foliage, that are useful to plant as "dot" plants in the herbaceous border:—

<i>Bambusa palmata</i>	<i>Gaultheria Shallon (peat)</i>
<i>Berberis Darwini</i>	<i>Olearia Haasti</i>
" <i>ilicifolia</i>	<i>Pernettya</i>
<i>Caryopteris Mastacanthus</i>	<i>Piptanthus nepalensis</i>
<i>Choisya ternata</i>	<i>Phlomis fruticosa</i>
<i>Cistus cyprius and ladaniferus</i>	<i>Ruscus racemosus</i>
<i>Escallonia revoluta</i>	<i>Skinunia japonica and fragrans</i>

J. Benbow, Abbotsbury Castle Gardens, Dorsetshire.

THE ROCK GARDEN.

COLCHICUM SIBTHORPII.

AMONG the flowers likely to become in demand when the value of the Meadow Saffrons for the garden in autumn is better realised is *Colchicum Sibthorpii*, supposed to be a native of the Greek mountains. Smaller only a little than the noble *Colchicum speciosum*, or the still larger *C. Bornmulleri*, it has the advantage in the eyes of some of being distinctly chequered in its colouring. *C. Sibthorpii* is the best of all the chequered forms. It is, perhaps, less distinct in its markings than that pretty but unreliable species, *C. Parkinsoni*, or what is known by that name, but its chequers are quite definite in their appearance. The blooms are large, cup-shaped, and more approaching the form approved by florists in the case of the English Tulips; they are also well elevated above the soil, on good, firm tubes. The general colouring of the flowers is, perhaps, best described as purple-lilac. The leaves, which appear in spring, are much smaller than those of *C. speciosum* or *C. Bornmulleri*, but larger, and more wavy in their outline than those of *C. autumnale*. Like the greater number of the *Colchicums*, *C. Sibthorpii* likes a rather moist soil, and one which is not too loose in its texture. It is not yet plentiful, and is higher in price than it ought to be, when one considers the freedom with which it increases, though it is a mistake to divide the clumps too frequently.

CROCUS ZONATUS.

This valuable little *Crocus* (figured in *Gardeners' Chronicle*, February 5, 1898, p. 85) for autumn-blooming anticipated all others in my garden this season. Possibly, were I able to grow it, *C. vallicola* would open its flowers rather earlier, but after repeated trials, I have now given up attempting to cultivate that beautiful but thin-petalled flower. Planted near *C. speciosus*, *C. zonatus* comes about a fortnight earlier than it, but it is possible, by planting it in a colder position, to have it as a contrast to the darker flowers of that effective *Crocus*. *C. zonatus* has rosy-lilac flowers, made more charming by the orange-coloured zone by which the base of the interior of the segments is decorated. It is one of the flowers which ought to be planted in quantity in all but the most exposed gardens, and one can imagine the effect which would be made by planting a few thousands in the grass. A similar number planted in lines or groups in the border would give a rare effect, and though the treat would be a brief one, its annual recurrence would be eagerly anticipated as summer passed away.

LITHOSPERMUM PROSTRATUM.

Looking over the few rock-garden plants which yet give us flowers, one thinks how few there are to equal the beautiful *Lithospermum prostratum*, which is neither new nor rare. One may occasionally see a plant a foot or two across, but it is rare to find one which measures a yard or more in diameter. The reason is that some of our winters and springs cut it badly, and cause it to need some pruning to make it grow away again from near the base. There are also some people who are not satisfied to allow it to remain when doing well, but who insist upon taking it up to give it fresh soil, or a more prominent position. It deserves a good place, but a look at its roots is sufficient to show that it is not a plant which may be removed

seen true form of *N. zanzibarensis*, and the Berlin variety of *N. stellata*. In some respects it is similar to the latter, but it is of a much deeper colour and more robust, though its flowers do not rise more than half the height above the surface of the water that is reached by those of the Berlin variety. The growth seems to be more vigorous than that of the other varieties named, but the leaves produced are somewhat fewer, and the flowers are about half as numerous as those on a single plant of the Berlin variety grown under similar conditions. They remain open for four or five days, getting nearer to the surface day by day, and afloat on the fourth. The flowers are very large—few days ago there were three flowers open on our one plant here, and probably nearly forty on our

likewise spotted. The stamens are yellow, tipped with blue, as in other varieties of *N. stellata*, and the flowers possess the odour characteristic of the type.

The superior appearance of the flower is caused not only by the deeper tint of the petals, but the sepals also are blue in colour; whilst those of *N. stellata*, Berlin var., are greenish-white. The sepals of *N. pulcherrima* are very stiff too, and therefore never hang down when the flower expands. The number of petals seems to vary between twenty-one and twenty-three for *N. pulcherrima*, and is frequently twenty-eight with the other variety, but the number of stamens does not appear to differ very much. *N. stellata*, Berlin var., does not produce seed, though the number of

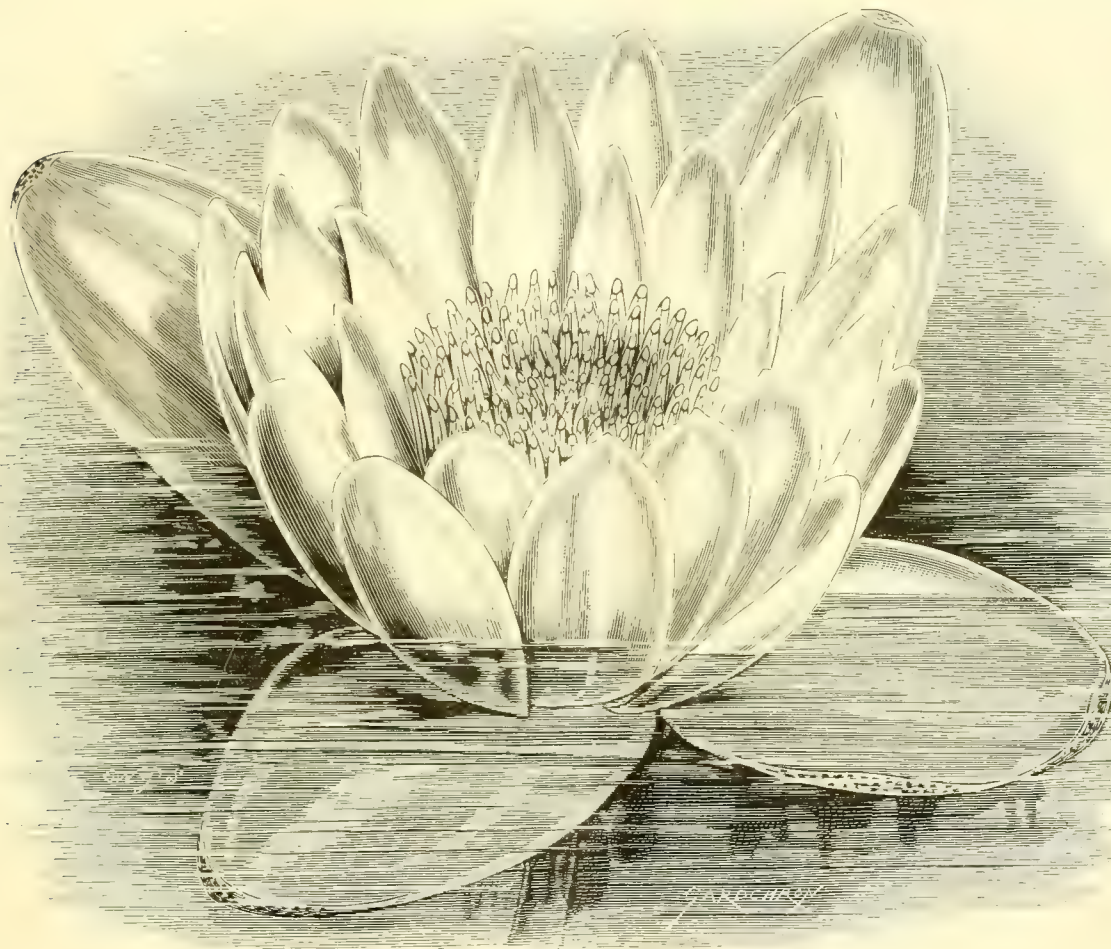


FIG. 81.—*NYMPHÆA STELLATA PULCHERRIMA*.

readily when it has become large. A healthy plant, forming a carpet of its dark green foliage, liberally decorated with its deep purple-blue flowers, is quite a picture when seen hanging over a large stone, or over the brow of a rocky bank. Shelter from cold winds is very needful. Some find much difficulty in striking cuttings of *L. prostratum*, but one need have little trouble if they are taken off with a heel of old wood, and inserted deeply in pots of sandy soil completely surfaced with sand, and placed in a greenhouse or frame in autumn. *S. Arnott, Carsethorn, N.B.*

NYMPHÆA STELLATA VAR. PULCHERRIMA.

THIS beautiful aquatic is a valuable addition to the blue Water-Lilies, and well worthy of a place beside the best of them, *N. gigantea*, the rarely

six plants of the Berlin variety. The largest flower of *N. pulcherrima* was 2 inches more in diameter than the largest of the Berlin variety. As will be seen from the illustration (fig. 81), the petals are broader and less stellate. Hence the flower has a fuller appearance than that of the Berlin variety, although it has usually but twenty-one petals to the twenty-seven or twenty-eight which can be counted on the best flowers of the latter as grown here. It generally opens out on the plant wider and more fully than it is depicted in the illustration, which represents a young flower. The flowers can be relied upon too to remain open later in the day than those of *N. stellata*. The Berlin variety has sepals of a light green colour, and there are no spots either on the sepals or leaves; but *N. pulcherrima* has sepals of a darker green, with frequent black spots on the outside as indicated in the illustration, the reverse of the leaves being

tubers increases very slowly. *N. pulcherrima* has not made any young tubers here, but produces seed. It has been grown side by side with the latter, and under exactly the same conditions (in an open-air tank in which the water is warmed and kept at 70° to 75° F.), and so the relative hardiness cannot be said to have been satisfactorily tested; but from America it is claimed to be the hardiest of all the blues.

A plant of *N. pulcherrima* is reported to have been grown for two or three consecutive seasons in this country, flowering in the open air in the summer without artificial heat, and being taken inside in the winter, but I have no definite information as to the locality where this occurred. It is described as a variety of garden origin, coming from the United States, but I do not know to whom the credit of raising it must be assigned. *J. F. Hudson.*

FLOWERS IN THE SOUTH-WEST DURING AUGUST AND SEPTEMBER.

ALTHOUGH commencing its blooming season in early summer, *Achillea ptarmica* fl.-pl., The Pearl produces its small, white, rosette-like flowers well into the autumn months. *Agapanthus umbellatus*, which was in bloom in July in the open ground, extended its flowering through the whole of August and first half of September. The white variety was, this year, the earliest to bloom, and, contrary to custom, bore the larger flower-heads, the type and its paler blue form, which did not blossom until three weeks later, losing in length of flower-stalk, and size of umbel from the dry weather then prevailing. Large clumps a yard in diameter, set with twenty or more massive flower trusses, form noble objects on sheltered lawns. *Agathæa coelestis*, sometimes known as the blue Paris Daisy, passes through the winter unharmed in the south-west in mild seasons, large plants, studded with soft-blue flowers, being an attractive sight in early August; at which season the Sweet Alyssum (*Koenigia maritima*), which is a perennial on warm, dry banks, and multiplies itself by countless, self-sown seedlings, covers the steep slope with a veil of white, honey-scented blossom. Of the Belladonna Lilies, *Amaryllis blanda* is the first to bloom, and is distinctly superior to the commoner *A. Belladonna*, its flower-stems being considerably taller, and its blossoms, the petals of which are more elegantly reflexed, paler in tint, and more numerous. This variety is, however, comparatively rare in gardens, but the type is largely grown in narrow, wall-backed borders, where a broad band of hundreds of bloom-scapes may sometimes be seen flowering simultaneously. The white form of *Anemone japonica*, which, in rich soil, often exceeds 5 feet in height, commences to flower in the first days of August when the earliest of the perennial Asters are expanding their blooms.

The dwarf *A. Amellus bessarabicus*, one of the most ornamental of the genus, usually ushers in the display, which is continued uninterruptedly until mid-November, when the fine *A. grandiflorus* is at its best. A representative set are *Aster acris*, *Amellus bessarabicus*, *cordifolius elegans*, *ericoides*, *grandiflorus*, *punicus pulcherrimus*, *Thompsoni*, *Novi-Belgii*, *Archer Hind*, *N.-B. Harpur Crewe*, *N.-B. Robert Parker*, *Novæ-Angliæ Melpomene*, and *N.-A. ruber*. *Aster grandiflorus* should not, however, be included in cold districts, owing to its late flowering season. Other Aster-like flowers are *Boltonia asteroides*, and *B. latisquama*, which bloom in September. The great *Calceolaria* bushes, to which I have before alluded, have been in flower throughout the whole summer, and are now (October 4) still golden with bloom; the species is *C. rugosa* or *integrifolia*, and the variety *viscosissima*. Where the climate is sufficiently equable to admit of these plants passing through the winter uninjured, few subjects can compare with them for decorative effect during the summer months. The charming, re-introduced, annual *Aster*, *Callistephus sinensis*, is without doubt one of the most valuable annuals we possess; its large, single flowers, often 5 inches in diameter, of soft mauve with yellow eye, are freely produced on bushy plants 18 inches in height. In addition to its worth as a garden subject, this plant has the merit of bearing flowers that are eminently adapted to artistic, indoor decoration; while the blooms will remain fresh in water for a period of ten days or more.

Self-sown seedlings of *Campanula pyramidalis* in retaining walls made a pretty picture in the early days of August, at which time *Chelone barbata*, *C. Lyoni*, and *C. mexicana*, were in flower. *Clematis Davidiana*, a herbaceous species, forming a symmetrical bush, has borne numerous clusters of its lavender-blue blossoms; and at the close of September, the *Colchicums*, or Meadow Saffrons, commenced to expand their chalice. The so-called "Autumn Crocus" (*C. autumnale*) is well known; and the rosy-lilac, leafless flowers of a colony of this plant, established on a grassy bank, have a

charming effect in the autumn garden. A rarer and still more beautiful form is the double white variety; while the fine *C. speciosum*, which bears flowers almost Tulip-like in size, and grows nearly a foot in height, is particularly ornamental.

Commelina coelestis is another lovely flower, but rarely seen in the gardens of to-day, and is almost unique in the richness of its perfect blue. The noble *Crimums* succeed admirably in the open in the south-west, and may be found in bloom in many gardens during the summer and autumn. *C. Powellii*, *C. Powellii album*, *C. Moorei* and its white variety, known on the continent as *C. Schmidtii*, have all blossomed well, a colony of the latter flowering in front of a large plant of *Plumbago capensis*, also in full bloom, affording an exquisite picture. When the flowers of these *Crimums* wither, they are succeeded by small bulbs in lieu of seeds, and are thus easily propagated. The pretty little *Crocus speciosus* has opened its lilac-purple flowers; while the Dahlias have provided the brightest feature of many a mixed border. For garden effect, however, several of the newer *Cactus* varieties, though producing blooms perfect for the show-board, are totally unsuited, since their flowers are not thrown up above the foliage, but are, for the most part, hidden amongst the leaves. Intending purchasers should therefore be careful to inspect growing plants before ordering, or they will run the risk of acquiring varieties that are useless for ornamental effect. What is wanted is the habit possessed by some of the older "decorative" Dahlias, such as *Rising Sun* and *Glare* of the Garden, where the flowers are borne in quantity, and carried well above the leafage. *Erythrina crista-galli* has been a notable sight, bearing spikes of crimson flowers often 3 feet in length; large plants carrying a dozen or more flower-spikes have a fine effect, even from a distance. As a rule, this plant dies to the ground in the winter, but I know two cases where it has formed a persistent stem from which shoots are thrown out in the late spring. In one instance this stem is 5 feet in height, and 18 inches in circumference, but it may be mentioned that this specimen is growing outside a stove-house wall. *S. W. F., Devon.*

(To be continued.)

IRELAND.

STRAFFAN.

THE flower-gardens just now are lovely—*Begonias*, *Violas*, *Verbenas*, *Heliotropes* (dwarf), *Pelargoniums*, pyramidal *Celosias*, and many other dwarf things, relieved by purple Plums (*P. Pissardi*), *Aralias*, *Eulalias*, *Arundo Donax*, *Fuchsias*, and such pyramidal and standard Peruvian *Heliotropes* as are rarely seen, 6 feet high, and a mass of bloom. Those *Heliotropes* are quite a remarkable specialty at Straffan; so also are sweet-scented flowers—*Nicotiana affinis* and *Mignonette*, *Lavender*, *Sweet Peas*, dwarf dark *Heliotropes* (President Garfield, and others), *Verbena* (*Aloysia*), and *Roses* old, and *Roses* new, everywhere about the place, none just now more showy and tender in perfume than the old pink China in masses on the lawn.

I enclose a couple of leaves of *Polygonum sachalinense*, the giant Knot-weed of Japan. Did you ever see it assume such gorgeous Vine-leaf-like colouring? It is from the bog-garden at Straffan, where it grows in a hollow, but little above the level of the silvery Liffey, and is now and then flooded, its roots and 12 or 18 inches of its stem being submerged. [The leaves sent were of a rich claret-red. Ed.]

Mr. Bedford has been twenty-five years at Straffan, and is as enthusiastic as ever as to its welfare from a horticultural point of view.

We have had a showery season, very hot at times, and all crops are good and promising, except Main Crop Potatoes, which will be in many cases a failure. It is one of the best Apple years I ever saw in Ireland. The fruit is not large, but abundant and well coloured. *F. W. B.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Cattleya Walkeriana, though not a very popular plant, should be represented in a collection, owing to the singular manner in which its flowers are produced, namely, from a separate growth. Established plants having now completed their growth, will need a long period of rest, in a light position in the Cattleya-house. Freshly-imported plants should not be hurried into growth, it being better to afford them a cool, dry atmosphere in a Cattleya or intermediate-house, where they may be laid on a dry part of the stage until roots appear. *C. Walkeriana* should be cultivated in shallow pans, or on rafts of teak-wood, and be thus conveniently suspended from the roof in full light. A very small quantity of peat and sphagnum-moss is needed for them to root into, and water should be afforded them only very occasionally during the winter months, no attempt being made to keep the sphagnum-moss green.

Lælia pumila and *L. Dayana*.—Growers who have recently acquired freshly-imported plants, should stand them as upright as possible on a moist stage in an intermediate-house, avoiding very strong light for a time, or the foliage may suffer. When new roots appear, put each piece into a small, perforated pan, with wires attached for suspending. Arrange the plant in the pan, secure a few of the pseudo-bulbs to the wires, then put in crocks almost to the rim of the pan, and surface with peat and sphagnum-moss mixed together equally. Water the roots slightly from a rose-can, and suspend the plants in a house having a temperature of 55° or 60°. An occasional watering to keep the surface moist will be sufficient for some months to come.

Lælia Digbyana.—Withhold water until the pseudo-bulbs appear to shrivel, and suspend the plants in a warm, light position in the Cattleya-house. Hybrids of which *L. Digbyana* is a parent require, whilst growing, the warmth and other conditions of an East Indian-house, but when the pseudo-bulbs have developed, they should be removed to dryer and cooler conditions. Their pseudo-bulbs, however, are more succulent than those of *L. Digbyana*, and should not be afforded so extreme a rest.

Cymbidium grandiflorum, &c., should now be developing its flower-spikes, also *C. giganteum*, *C. Tracyanum*, and the hybrids *C. × Winnianum* and *C. eburneo-Lowianum*. To assist the development of these, remove the plants to a house having a temperature of about 55° to 60°, and where there is much light. Do not afford them water except when the material has become dry. *Cymbidium Lowianum* makes good progress during late autumn, the cool, moist air being suitable to it. Afford this plant water rather freely until the flower-spikes appear. *C. Devonianum* has finished growing, and is now showing its flower-spikes. To prevent these penetrating the soil, place a piece of glass beneath any that show a disposition to grow downward. Very little water is needed just now, and none should be permitted to lodge on the flower-spikes. *C. eburneum* should be afforded sufficient only to keep the soil moist. The two species last mentioned may be grown with the *Masdevallias*.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Fruit Gathering.—Most of the Main Crop varieties of Apples and Pears are now in fit condition for gathering, and this work should be done with the greatest care, or the fruits will not keep well. Be sure that the baskets have placed in them a good layer of soft hay, that the fruits may not be marked by the hard wicker work. Do not gather any fruits excepting the weather be fine, and the fruits quite dry. When it is possible to gather them in this condition, fill all the baskets available, and defer storing them until the weather is less favourable for gathering.

Storing Fruits.—It will depend upon circumstances whether the fruits should be placed singly on the shelves, or in several layers. The first is undoubtedly the better method if there be room for its adoption. Apples suffer less harm

than Pears if placed one on the other, therefore if possible leave sufficient space to store the Pears singly. Pears ripen best also in a separate apartment, but it is only in a few gardens that they are afforded it. When Apples and Pears are stored in the same structure, put the Pears at the warmer and the Apples at the cooler end. A capital way of ripening Pears when a proper Pear-room does not exist, is to utilise, or build, a cupboard near to a fireplace, or to some hot-water pipes where the heat is steady. Here the fruits will ripen to perfection, and a good succession may be maintained if attention be paid to the placing of a few dozen fruits on the shelves every week. Ventilate the fruit-rooms very freely for some little time following the storing of the fruit, to allow the moisture given off in the process of what is called "sweating" to pass quickly away. When this stage has passed, keep the room quite dark and cool, and if it is properly constructed, only the ventilators in the roof need be used to keep the atmosphere in a sweet condition.

Late Pears should be left on the trees as long as possible, and if not gathered until the first week in November, they will eventually ripen more thoroughly, and be found to possess superior quality. Tomtits and Robins often attack and spoil late Pears, by making holes in them near the stalks. To prevent this, it may be necessary to cover the trees with netting.

Brambles.—*Rubus laciniatus* has borne an immense crop of fine fruits this season. After the crop has been gathered, these Brambles will need to have the old canes cut away, and those made during the current year reduced to five or six at each stool. Clear away the exhausted mulch, also weeds and rubbish; tie the canes to the trellis with thin tarred twine, and the ground between the plants may be manured at any convenient time.

Peaches and Nectarines.—With the exception of the latest fruiting varieties, the crop is now finished. Attention must therefore be turned to relieving the trees of all useless wood. Pass a long-handled broom or besom over the trees of early varieties, when all leaves that are ripe will fall and give the young wood a greater exposure to the sun's rays. If any of the late varieties require attention at the roots, either in the way of lifting them or pruning them, attend to the work at once. If growth has been rank, or if the trees have cast their fruits, either after stoning, or about the ripening period, do not neglect to afford the roots, when refilling the trench, some fresh loam freely charged with calcareous matter, such as old plaster or lime-rubble.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Pines.—A reduction of temperature may now be made in all houses except where fruit is swelling, where warmth and moisture is still needed. A night temperature of 70° to 75°, with a rise of 10° on warm days, and a bottom-heat of 80° to 85°, will be sufficient to keep the plants in a growing condition. Feed them at the roots, and keep the evaporating troughs filled with weak liquid-manure until the fruits show signs of ripening. The strongest of successional plants intended for early fruiting next season should now be afforded a night temperature of 60° to 65° only, and a bottom-heat of 75°. Keep these plants comparatively dry at the roots. Suckers may still be potted and placed in conditions to hasten the making of roots. Any of these that were potted a couple of months ago and are now well rooted, may be afforded a small shift, and following this, a little extra top-heat and a fresh bed of fermenting material.

Melons approaching the ripening stage, should be afforded a night temperature of 70°, and a dry atmosphere. Do not allow the roots to become too dry before affording them water, as sudden fluctuations of moisture at the roots, or in the atmosphere, will cause the fruit to split. A light mulching of short manure, put over the roots, will be better than too frequent waterings. Sunny mornings should be selected for affording water, and while the house is freely ventilated; allow a few hours to elapse before closing the house. Later crops swelling their fruit should be kept warm and moist, and the house closed early on sunny days. Do not syringe them except on bright mornings. If there be any sign of canker, dress the part with a mixture of powdered charcoal

and lime. Stop and regulate the growths, but a little growth left beyond the fruits, at this season, will act as a safety valve against "splitting." A night temperature of 70° to 75°, with fire-heat, and a rise of 10° with sun, will be necessary to keep the plants vigorous.

Cucumbers.—Plants now established and intended to supply fruit during the winter months, should not be allowed to crop too freely in the early stages of growth. Allow a little more freedom of growth than is usual earlier in the season, and remove all male flowers and deformed fruit as they appear, retaining only the most perfect, and these should be cut directly they are fit for table. Fill the evaporating troughs with weak liquid-manure, and damp down the house several times daily. Afford the roots a light top-dressing of fibrous-loam and dung in equal portions, and keep them uniformly moist. The roof-glass of the house should be cleaned to admit the fullest light to the foliage. Afford the plants a night temperature of 70°, and 75° by day with fire heat, and a rise of 10° by sun.

Strawberries.—The earliest may now be placed in their winter quarters. No better position than inside a skeleton-frame can be found for them, provided the pots are plunged in cocoa-nut fibre or sifted ashes, and this material should be placed an inch thick over the rims of the pots, and round the collars of the plants. If the pots are well filled with roots, and the drainage good, no amount of wet will do them any injury. Later plants will be benefited by being placed in cool frames under glass, and afforded water regularly. The protection of glass will maintain the newly-made foliage in health to a later date, and materially assist in strengthening late crowns.

THE KITCHEN GARDEN.

By A. CHALMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Lifting root crops.—For the next few weeks the storing of the root crops will be the most important work needing to be done. If the root crops be cleared from the ground early, the work of removing them may be done much more easily than if left until severe weather occurs, and there will be sure to be sufficient time to cleanse and prepare the soil for future crops. During wet days, sort the roots already lifted.

Salsify and Scorzonera, if sown at the time I recommended, has made good growth, but it will continue to improve for some time to come. If the plants have run to seed, it will be better to sow seeds later next year. Drought rather than heat causes the plants to fail. If a top-dressing was afforded in July as recommended, its benefit will now clearly be seen. Afford the plants one more watering with liquid-manure.

Beetroot.—The main crop should now be fit for lifting. If the roots are very coarse in texture, and inferior in colour and flavour, the ground has probably been manured too recently; but if the seeds be sown too early, as much or more harm is done. Lifting should be done very carefully with a fork, and it is better to store the roots undressed than cause bleeding by removing soil from them with the knife. Commence to lift them a day or so after rainfall, when the ground being in good condition, the roots will be comparatively clean. Select the coarse roots, and store them separately, that they may be used first, as their keeping qualities are inferior. Cut off the tops with a knife, but not sufficiently close to the crown to cause bleeding. The roots may be stacked in heaps of moderate size, or they may be placed in layers on shelves in a cold, dry cellar. If mice are troublesome, cover the roots with a sprinkling of sand and moist soil. Beetroots are not harmed by a few degrees of frost, so that if necessary a number of roots may be left in the ground, and when hard weather commences, covered with litter and bracken.

Carrots.—The present is the best time to lift all varieties of Carrots sown for the main crop, and also any roots left in the ground from earlier sowings. Carrots do not generally improve when left in the ground later than October; but in districts where growth has been slow, it may be necessary to leave such varieties as the Long Red Surrey, &c., for a few weeks longer. If the longer-rooted varieties be lifted before they are sufficiently matured, the roots may shrivel in early spring. Thoroughly dry the roots before storing them, and stack the imperfect and cracked ones by themselves

for early use. It is a common error to cut off the tops too close to the crown. If late sowings of Carrots were made as advised, the eggs will not all be in one basket; but if there is not another crop later than that now being lifted, the roots must be housed with the greatest care. A cool shed is best for this purpose. Lay a few rough boards on the bottom, and cover them slightly with bracken or well dried straw. The roots should then be laid in double rows, crown outwards, sprinkling between each layer fine earth or sand. Carrots should be sufficiently protected, that weather cannot affect them.

Small Salads.—Sowings of Mustard and Cress should now be made once or twice in the week in boxes or pans filled with a light rich compost, and place pieces of slate over them after they have been afforded water. A shelf in a Cucumber-house will be a suitable place to start these, but they may be removed to a cooler position when others are sown.

PLANTS UNDER GLASS.

By T. EDWARDS, Foreman, Royal Plant Gardens, Frogmore.

Stoves.—The night temperature should be maintained as high as 70° at present; but frequently damp the paths, and fill the evaporating pans with water, so that the atmosphere may be moist. *Nepenthes* may be lightly sprayed with the syringe each evening. Shading need only be used during bright sunshine. During fine calm weather, ventilate the house freely, but avoid cold draughts. The temperature may rise to 90° with sun heat. Plants intended for house and table decoration, but which are pot-bounded, may be helped considerably by affording them a top-dressing of loam, sand, and a sprinkling of bone-meal, or Standen's manure.

Soft-wooded plants should be grown without any check, and *Calceolarias*, *Cinerarias*, *Humeas*, *Primulas*, &c., potted as soon as they require more rooting space. The best place for them is a span-roofed pit, with a 4-inch hot-water pipe round it, which need be used only during frost. The plants should be stood upon a bed of ashes, kept quite cool, and afforded ample ventilation. *Cinerarias* that are showing flower should be afforded manure-water twice a week, and it is a good plan to fumigate or vaporise them at regular intervals, say once a month, to prevent an attack from aphids.

Freesias will need a little support for the flowers. Insert a very neat stake for each bulb, and those plants which were potted first may then be removed to a light position, where a night temperature of 55° may be maintained. Afford ventilation freely, and syringe the plants at least twice a day, as they are liable to attack from red-spider. Successional plants may be kept quite cool during open weather, and the sashes or lights may be removed from over them when it is fine.

Callas.—Those plants which were rested in the pots and repotted as advised, may now be introduced to heat. Allow the spathes to become fully developed before moving the plants to the conservatory, where they will keep fresh for three or four weeks. Regular supplies of manure-water should be afforded them, as they are gross feeders and semi-aquatic in their requirements.

Clorodendron fallax showing flower may be assisted by some liquid-manure. The species is easily grown from seed if treated as a tender annual.

ENQUIRIES.

DENDROBIUM PHALENOPSIS.—Has any orchidist succeeded in fruiting this plant? We recently saw a ripe capsule in one of M. Linden's establishments at Brussels.

HYBRID BETWEEN MILTONIA VEXILLARIA AND ODONTOGLOSSUM CRISPUM.—Has any such hybrid been raised in this country?

CRACKING OF GRAPES.—We are very much troubled with our Muscats cracking close to the stalk, and should be very much obliged if you would kindly enlighten us as to the cause of it. *Anxious to Know*. [We shall be glad if some of our Grape-growing friends would favour us with their opinion. The crack extends in a semi-lunar manner half across the berry just above the junction with the stalk. There is no appearance of spot or other fungus. Ed.]

Is a notice of dismissal given upon Sunday legal or not? Can an engagement made upon a Sunday be held to be legal? *D. S.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY, Oct. 15.—Dutch Bulbs at Protheroe & Morris' Rooms.—Lilium Longiflorum, Dutch and French Bulbs, Azalea Mollis, Palms, &c., at Stevens' Auction Rooms, 38, King Street, Covent Garden, W.C.

TUESDAY, Oct. 16.—Important Sale of Nursery Stock at the Sunningdale Nurseries, Sunningdale, Berks, by Protheroe & Morris, at 12.30. Dutch Bulbs at Protheroe & Morris' Rooms.—Dutch Bulbs, at Johnson, Dymond & Son's Rooms, Gracechurch Street, London.

WEDNESDAY, Oct. 17.—Sale of well-grown Nursery Stock at The Old Nursery, London Road, Spring Grove, Isleworth, by order of Mr. H. A. Bear, by Protheroe & Morris, at 12. Dutch Bulbs at Protheroe & Morris' Rooms.—Dutch Bulbs, Japanese Lilies, Palms, &c., at Stevens' Auction Rooms, 38, King Street, Covent Garden, W.C.

THURSDAY, Oct. 18.—Dutch Bulbs at Protheroe & Morris' Rooms.—Dutch Bulbs, Plants for Forcing, &c., at Johnson, Dymond & Son's Rooms.

FRIDAY, Oct. 19.—Imported and Established Orchids, and Dutch Bulbs, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—50°5'.

ACTUAL TEMPERATURES:—

LONDON.—October 10 (6 P.M.): Max. 63°; Min. 48°.

October 11, foggy in morning, fine, colder.

PROVINCES.—October 10 (6 P.M.): Max. 54°, S.W. Counties; Min., 44°, N.E. Scotland.

Two Garden
Dictionaries.

We have great pleasure in announcing the publication by **UPCOTT GILL, 170, Strand**, of a "1900 Supplement" to **NICHOLSON'S Dictionary of Gardening**, one of the best and most useful books of reference that we have. Some works of this character are merely the result of diligent, and more or less intelligent compilation; but this is the outcome of the knowledge and experience of one of our most capable experts, and of one who has enjoyed for many years exceptional facilities for obtaining information. It is therefore widely different in value from the paste-and-scissors work of the ordinary compiler.

The present instalment extends from A to F. It is, as the publisher's preface tells us, a "supplemental volume [intended] to include all additions and modifications that Time has rendered necessary, thus bringing the entire work right up to the present time, without decreasing, but on the contrary increasing the value of the volumes already in the hands of the subscribers." This is what the publisher says, and we have no objection to raise to his statements; at the same time we should have been glad if he could have seen his way to have incorporated the original supplement in vol. iv. (pp. 482 to 608) with the present one, and so saved some part of the time and labour now involved in searching through the text and the two supplements. We should also have been glad if **MR. NICHOLSON** himself, "**PHILIP MILLER the Second**," had contributed a few words indicative of the principles which have guided him in his selection of subjects. There are, indeed, everywhere traces of the care that has been taken to bring the work up-to-date, and evidences of judgment in the adoption or otherwise of newly-coined names. Thus *Cypripedium* and *Selenipedium* are retained, while the more recently-proposed *Paphiopedium* and *Phragmiopidium* are merely mentioned as not sufficiently familiar to other than specialists. A preferable plan would be to keep the genera *Cypripedium* and *Selenipedium* distinct, and to adopt the proposed new names as subdivisions of

Cypripedium. A list of hybrid *Cypripediums* extending over some eighteen columns of small type is given, and furnishes an interesting illustration of the trend of modern horticulture. The article "*Begonia*," and that on "*Hybrid Water-Lilies*," also show the care taken to bring the book up-to-date.

The illustrations are numerous and appropriate, but unfortunately in few, if any, cases is there any standard of measurement. There are many points of detail on which difference of opinion is permissible, but no such difference is possible as to the great value of the work as a whole. It is the business of an Editor to be very sparing in his own use of adjectives, and frequently to strike out remorselessly many used by others; but in the case of this book the difficulty is to find expressions that are adequate to indicate its merits, without indulging in what might appear to the uninitiated as uncritical superlatives. We look forward eagerly to the completion of the "1900 Supplement."

SIMULTANEOUS with the publication of the "1900 Supplement" to **NICHOLSON'S Dictionary**, is the receipt of the second volume of Professor **BAILEY'S** monumental *Cyclopaedia of American Horticulture* (**MACMILLAN**), which brings the work down to the letter M. The book is specially intended for the use of our cousins across the water; but it is so full of matter interesting to horticulturists generally, that no horticultural library can afford to dispense with it.

It covers much the same ground as **NICHOLSON'S Dictionary**, but the descriptions are rather fuller, and there are numerous articles on American specialties which would be out of place in a British treatise, but which nevertheless are of very great interest to the student. It is clear that a process of evolution is going on rapidly in virtue of which American gardening and American plants are becoming more and more specialised, and are diverging more or less widely from European systems. Introduced plants are becoming Americanised, but the greatest advance is being made in the development and improvement of American types, which are better suited to the "environment" than are introductions from foreign countries.

In addition to descriptions of plants, there are in this volume articles on special subjects, which are so fascinating that we find ourselves immersed in them when we had only intended to refer to a particular entry. Among such articles we may mention those on exhibitions, on experiment stations—of which there are fifty-four in the States, employing six hundred and sixty-nine persons, of whom seventy-seven are horticulturists, and issuing upwards of four hundred reports annually. The history of horticultural progress in various States, and in the country generally, is also treated in a manner that is very instructive and suggestive.

Another feature in this volume is the introduction of short biographical notices of deceased worthies: thus, in turning over the pages we come across a sympathetic notice of **ASA GRAY**, as deeply venerated here as he can be in his own country; of **CHARLES HOVEY** and of **PETER HENDERSON**, a Scotchman by birth, and almost as well known here as in his adopted country. There are a few neologisms, some of which, such as "graftage" for grafting, seems unnecessary.

The formation of a herbarium is recommended to nurserymen, for the purpose of keeping his stock true to name. "The unnecessary waste

in time and money caused by confused nomenclature and confused labels is one of the difficulties of a large collection of growing plants."

It is well said, in a certain sense, that the librarian who reads is lost. Something of the same sensation comes over us in turning over the pages of this volume. Every turn of the page offers some new subject of interest to tempt us to read. If this notice is to be brought to an end, the temptation must be resisted; in the meantime, we can offer no better illustration of the value and interest of the book.

CERTIFICATED PLANTS.—The Royal Horticultural Society has just issued a most valuable *List of Plants and Vegetable Products Certificated by the Society from 1859 to 1899 Inclusive*. It comprises 210 pages. The Orchids have been dealt with more ambitiously, some attempt having been made to place them in their tribes and sub-tribes. We shall have occasion to examine the list more carefully, but we may say on first impression that the list has been carefully compiled, and is most creditable to the Society.

OUR SUPPLEMENT.—In our issue for last week was published a supplement showing the residence of Lord **LLANGATTOCK**, at The Hendre, Monmouth, accompanied by a description of the park and gardens there, by our correspondent, **MR. W. CRUMP**, of Madresfield Court Gardens. This week we reproduce another photograph from The Hendre, showing a view in the pleasure-grounds there, with part of the lake in the foreground, its surface brightened by Water-Lilies.

THE ROYAL HORTICULTURAL SOCIETY AND CHISWICK GARDENS.—The proposed early abandonment of Chiswick is causing considerable dissatisfaction among suburban gardeners. **MR. ROUFELL**, the hon. sec. of the Brixton, Streatham, and Clapham Horticultural Society (which is affiliated with the Royal Horticultural Society), informs us that at their annual meeting held on the 4th inst., the members present passed the following resolution:—

"That in the opinion of this general meeting, the abandonment of the garden at Chiswick would have a prejudicial effect upon horticulture in the suburbs of London and other large towns by discouraging owners of gardens from sanctioning the outlay necessary to maintain and increase the fertility of the soil, so as to adapt it for the continuous production of first class fruits, vegetables, and flowers; and further, that in the opinion of this meeting, the Council of the Royal Horticultural Society would be rendering a great service to horticulture if they took steps to restore the fertility of the garden at Chiswick by judicious expenditure and skilful treatment, so that it might become an object-lesson to suburban gardeners throughout the country."

THE MARQUIS OF BUTE, whose early death at the age of fifty-three, has just occurred in Scotland, will be known to many of our readers in connection with the efforts he has made to revive the cultivation of Grapes in South Wales. More than twenty-five years ago the late Marquis became convinced that it could be done, because in ancient days the monks were able to cultivate Grapes, and make wine of them in the Cardiff district. His well-known gardener, **MR. PETTIGREW**, was therefore sent over to France to obtain a knowledge of the methods practised in the French vineyards. Subsequently, experiments have been made at Castle Coch and at Swanbridge, which, upon the whole, have been thoroughly successful; and information has, from time to time, been published in these pages of the amount of crop the Vines have yielded, and of the remarkable prices realised by the Cardiff wines. On September 11, 1894, **MR. PETTIGREW** read a paper upon the subject at a meeting of the Royal Horticultural Society at the Drill Hall. In other ways also, the late Marquis was a good patron of horticulture, and his gardens attached to Cardiff Castle have for many years been notable for high-class fruit cultivation. Besides his seat at Cardiff Castle, the late Marquis had residences at Mount Stuart and Dumfries House in Scotland, and St. John's Wood, London, in addition to several small castles in

South Wales, at which he seldom if ever resided. Lord BUTE was a great antiquarian, and has spent a great deal of money in rebuilding Cardiff Castle on lines as nearly as possible the same as the ancient original design. This work has not been completed, and it remains to be seen whether or not it ever will be. The deceased Marquis is succeeded by his eldest son, the Earl of DUMFRIES, now in the twentieth year of his age.

"BOTANICAL MAGAZINE."—The plants figured in the current number are:—

Hippeastrum Harrisoni, Hook., t. 7737.—A species from Uruguay, with long, funnel-shaped, white flowers, the segments of which are marked on their upper or inner surface with red stripes. The plant has a curious history. Originally described as *Amaryllis Harrisoni* by LINDLEY in Mrs. BURY's magnificent folio volume on Hexandrian plants, it was called by Mr. BAKER *Hippeastrum Arechavaletae* (see *Gard. Chron.*, 1899, May 27, p. 332), and was referred to in the *Kew Index Addenda*, p. 1264, to *H. solandrifolium*, a very different plant.

Lindenbergia grandiflora, Benth., t. 7738.—A yellow-flowered Scrophulariad, resembling *Mimulus*. It is a native of the Himalaya, and is cultivated in the Cambridge Botanic Gardens.

Grevillea ornithopoda, Meissner, t. 7739.—An Australian Protead, with 3-sect leaves, and axillary spikes of greenish-yellow flowers. Cambridge Botanic Gardens.

Crocus Alexandri, Velen, t. 7740.—A form of *C. biflorus*, with lilac veins on a white ground—native of Bulgaria. Hort., Kew.

Dendrobium Jerdonianum, t. 7741.—A species with erect stems, oblong leaves, and racemes of orange flowers, with very narrow segments, and a blunt spur.

FRENCH CHRYSANTHEMUM SOCIETY.—The *Société Française des Chrysanthemistes* announce that autumn flower shows organised by them are arranged for: 1, Friday, October 12, at 2 o'clock, in the Palais du Commerce, Lyon; 2, Friday, October 26, at 8 o'clock A.M., in the Exhibition at Avignon; 3, Wednesday, October 31, at 8 o'clock, in the Exhibition at Paris; 4, Saturday, November 10, at 2 o'clock, in the Palais du Commerce, Lyon; 5, Tuesday, November 20, at 2 o'clock, in the Palais du Commerce, Lyon. Applications for space should be addressed three days before the date of any Exhibition, to the Secretary of the Society, 16, Rue d'Algérie, Lyon; or, for the Avignon Congress, to the Secretary of the Exhibition, 9, Rue Thiers, Avignon; and for that at Paris, to the Secretary of Class 46, Palais d'Horticulture, Exposition Universelle, Paris.

THE BECKENHAM HORTICULTURAL SOCIETY.—We have before us a syllabus of meetings that will be held weekly by the members of this Society from Friday last until April 26, 1901. The subjects which will be discussed are without exception subjects of very great importance to the practical gardener. We have had occasion heretofore to notice the excellent work performed by this Society, whose energies are not merely devoted to the holding of exhibitions, but also to the dissemination of horticultural knowledge amongst its members. Mr. MARK WEBSTER, Librarian to the Society, has charge of 300 volumes, all of which are available to those of the members who desire to make themselves familiar with their contents.

VINERY.—Mr. J. ALEXANDER, Main Ridge, Boston, kindly sends a photograph of a vinery 135 feet x 15 feet, containing forty-six rods, the variety being Black Hamburg. The average number of bunches is thirty-six to the rod, weight of crop about 2,400 lb., the average weight of bunch about 1½ lb. These Vines have been planted about thirty-five years, and when taking over this place just a year since, Mr. Alexander remarked to the former owner that he feared, from the look of the wood and the old horny spurs, that

they would not give much of a crop. However, he had them pruned, washed, and the border dressed with a good covering of manure from the stables and cow-sheds, lightly forked in, and then a good watering; then again at the stoning a dressing of Lawes' garden-manure, and at colouring another dressing of Lawes' chemical-manure, finishing the berries as black as sloes. The photograph is not suited for reproduction.

STOCK-TAKING: SEPTEMBER.—The Revenue Returns for the first half-year show an increase in the receipts, and, following suit, the Trade and Navigation Returns for last month show a continued upward progress in both imports and exports. The value of the imports for September is £41,232,852, against £38,721,079 for the same period in 1899—an increase of £2,511,773. Apart from the figures given in the annexed table, the larger increases are to be found in raw materials for sundry manufactures, £652,318; metals, £646,065; oils, £110,781; textile materials, £86,836; foods and drinks show the greatest combined increase. The following are the figures of the items we usually extract from the "summary table":—

IMPORTS.	1899.	1900.	Difference.
	£	£	£
Total value ...	38,721,079	41,232,852	+2,511,773
(A.) Articles of food and drink—duty free ...	13,454,951	14,544,753	+1,089,802
(B.) Articles of food & drink—dutiable	2,575,331	3,239,506	+664,175
Raw materials for textile manufactures ...	2,759,820	2,837,656	+77,836
Raw materials for sundry industries and manufactures	5,826,760	6,479,078	+652,318
(A.) Miscellaneous articles ...	1,322,978	1,358,840	+35,862
(B.) Parcel Post ...	89,769	84,470	+5,299

There are but two sectional decreases, i.e., £261,355 in tobacco, and £642,289 in manufactured articles. Turning to the subject of fruits, roots, and vegetables, we have the following figures:—

IMPORTS.	1899.	1900.	Difference.
	Bushels.	Cwt.	Value.
Fruits, raw:—			£.
Apples ...	263,449	181,176	-7,966
Apricots and Peaches ...	.....	932	+1,580
Bananas... bunches	.....	119,082	+50,184
Currants ...	.....	4	+4
Grapes ...	280,108	112,051	-37,050
Lemons ...	92,538	36,412	-8,946
Nuts—Almonds (cwt.)	10,340	21,255	+11,864
Others, used as fruit (value) ...	.....	£33,156	-5,123
Oranges ...	4,312	3,938	+1,063
Pears ...	179,593	149,542	+12,064
Plums ...	143,236	68,959	-19,649
Unenumerated...	301,788	92,914	-92,326
Vegetables, raw:—			
Onions ... bush.	718,062	744,631	+4,175
Potatoes ... cwt.	117,105	212,701	+10,008
Tomatoes ... "	.....	91,468	+82,195
Vegetables, raw, unenumerated... value	£144,989	£40,884	-104,105

London children have already forgotten the plethora of Plums in the plenitude of Pears and Apples, and more than occasionally exchanged the Banana for the Pomegranate. The prices of Currants still increase; and for many the coming Christmas will be likely to be a Currantless one. The value of the imports for the past nine months was £379,187,642, against £356,019,390, or a gain of £23,168,252. Our—

EXPORT

trade still continues to advance. The month's total is £24,559,811, as against £22,374,807 for September, 1899—an increase of £2,185,004; this

in face of the decline in six of the twelve sections comprising the total. The highest decline is £468,148 in yarns and textile fabrics; the highest increase is in raw materials (including coals), £1,706,307. The total for the nine months is £218,471,755, against £194,351,197 for the same period last year—an increase of £24,120,558. And all this, it will be remembered, in the face of wars and other political disturbances.

HYDRANGEA PANICULATA.—Mr. Coupland, The Hall Gardens, Pennybridge, Ulverston, encloses photographs of a plant of *Hydrangea paniculata* 6 feet high and 10 feet through, with 300 flowers on it. The plant was propagated about ten years ago, and planted in the herbaceous border next a sunk fence. The photograph shows a very fine clump.

STERNBERGIA MACRANTHA, writes Mr. J. G. BAKER, the best authority upon the matter we have, is quite distinct from *S. colchiciflora*:—"The former is the fine plant figured in last week's issue of the *Gardeners' Chronicle*; and the latter a poor thing, with segments not above one-eighth or one-sixth of an inch broad. It is figured by LINDLEY in the *Botanical Register*, t. 2008; and by REICHENBACH, in *Icones Florae Germanicae*, t. 372, figs. 823, 824, but is not worth cultivating except as a curiosity." Yet in the *Index Kewensis* the specific rank of *S. macrantha* is not upheld.

"FARNHAM AND ITS SURROUNDINGS."—This publication forms the thirteenth of a series of Homeland Association Handbooks, published (at 24, Bride Lane, Fleet Street) under the auspices of the "Homeland Association for the Promotion and Encouragement of Touring in Great Britain and Ireland." It is written and illustrated by GORDON HOME, with an introduction by EDNA LYALL, and has a large scale map of the country around Farnham. The district is interesting both as regards the villages and their rural surroundings, and of these both letterpress and illustrations give a good idea—interesting to a new resident as well as to the visitor to the neighbourhood. The cyclists, for whom the Handbook is more particularly intended, will find the table of runs around Farnham, giving distances and directions of the various places of interest, of much use to them in their rambles about one of the most beautiful of English counties.

"GROCERY."—We have received an advance copy of this periodical, which is of interest to horticulturists as containing a well-illustrated account of the vast Grape-growing establishments of the Messrs. ROCHFORD and other growers near London, as well as of that of Mr. Alderman PIPER, of Worthing. The enormous extent of the trade in Grapes, Tomatoes, and Cucumbers which has grown up within the last quarter of a century is well illustrated, and the services of Mr. GEORGE MONRO as distributing agent are likewise mentioned with well-merited commendation. The main object of the article seems to be to induce grocers to deal in choice samples of Grapes and Tomatoes. It is a matter for surprise why the ordinary suburban greengrocer should supply vegetables and fruits of such inferior quality. If the grocers should take some of their trade, the local greengrocers will have themselves to blame.

FAMINE IN GREECE.—Further advice from southern Greece and the Ionian Islands, confirm the reports recently received in this country by the Greek Consul-General and others, to the effect that the Currant crop is almost entirely destroyed by the *Peronospora*. Instead of the yield being 160,000 tons, it will not exceed 38,000 tons. Against this, consumers in the United Kingdom require for use on Christmas day alone, 17,500 tons, whilst between now and Yuletide, we want some 35,000 tons in addition. Since the arrival of the first steamer, the prices of Currants have gone up very high. The Vostizza grades are fetching from 75s. to 80s., and even 110s., per cwt. Ordinarily, they fetch from 22s. to 35s. per cwt. The outlook is

gloomy, as there is reason to fear that Currants will be hard to procure, even at famine prices. The cultivators and labourers in Greece are ruined, and subscriptions are already being asked for, and some well known firms have given considerable sums.

DENDROBIUM DENSIFLORUM.—Mr. FRASER SMITH, The Gardens, Cullen House, Cullen, N.B., encloses a photograph of *Dendrobium densiflorum*, grown by him, which this season has been much finer than usual, having twenty-one trusses of its beautiful yellow flowers. This is a special variety which he had sent him from Java, twelve years ago. It has much longer pseudo-bulbs, and larger trusses of flowers, which are richer in colour than in any other variety. The plant has flowered regularly for the past ten years. We have so often figured this species that we do not reproduce Mr. FRASER SMITH's photograph, which shows a well cultivated plant with a profusion of flower-spikes.

PUBLICATIONS RECEIVED.—Among the books on our table awaiting fuller notice are: *The Attack at Peking*, by A. B. Freeman Mitford, C.B. (Macmillan).—*Assuan as a Health Resort*, by W. J. Kingsford (Simpkin Marshall & Co.).—*Seven Gardens and a Palace*, by E. V. B. (John Lane, Bodley Head, London).—*Second Report of the Woburn Experimental Fruit Farm*, by the Duke of Bedford and Spencer Pickering (Eyre & Spottiswoode).—*The Locust Plague and its Suppression*, by Eneas Murro, M.D. (John Murray).—*Studies in Fossil Botany*, by Dukinfield H. Scott (Adam & Charles Black).—*Year-Book of the United States Department of Agriculture, 1899* (Washington: Government Printing Office).

THLADIANTHA DUBIA.*

THIS is both curious and ornamental; it belongs to the Cucurbit family, and is a native of China. For a long time only the male plant was known in cultivation, but the Abbé David eventually sent seeds to Paris, from which female plants were produced and artificially feduced. Fruits were for the first time obtained by Naudin (see *Ann. Sc. Nat.*, series 5, vi. (1866), 11, as quoted by Bretschneider, *History of European Discoveries in China*, 1893, p. 863). The fruit is ovoid, oblong, narrowed at the base, longitudinally ribbed, villose, seeds black. Our illustration (fig. 82) was taken from a fruiting plant exhibited at the Royal Horticultural Society, on Sept. 25, by Messrs. J. Veitch & Sons, of Chelsea. The name has reference to the unisexual character of the flower.

CULTURAL MEMORANDA.

CHRYSANTHEMUMS.

Now that the plants have been housed, they will seldom require water more than once a day, and not always that. The reason for this is that the pots being placed closer together, the air does not circulate among them so freely, nor does the sun reach them so well. A dry atmosphere will tend to prevent the spread of mildew rather than a close, damp one. Whatever watering is required should be done in the morning, so that the paths and floors of the house may have time to become dry before night. Continue to feed the plants until the blooms are three-parts expanded. Some cultivators say that directly the petals show colour, feeding should cease. In my opinion, that is just the stage when assistance is required to develop the blooms. If the weather be dull and sunless for a time, the plants will not require frequent watering, and there will be less opportunity then to stimulate them with liquid-manure. Under such circumstances, it will be necessary to use an artificial food, many of which are advertised. In damp or foggy weather, less air may be admitted, and the hot-water pipes should be warmed during the day, when air can be freely given to prevent

the atmosphere becoming stagnant. The glass in the roof of the house should be kept as clean as possible, that the plants may receive the full benefit of whatever light there may be. *E. Molyneux.*



HOME CORRESPONDENCE.

LILIUM AURATUM.—I enclose you a photograph of a plant of *Lilium auratum*, which is at present flowering in the garden of Mr. Galloway, Vinebank, Perth. It is seldom, if ever, that we see this *Lilium* reach such perfection so far north; the stems are five in number and stand 7 ft. high, and are remarkable for their extreme stoutness, each carrying over twenty flowers, the total number on the plant being 120. The original bulb was planted four years ago, and has been left undisturbed all that time; each year it has grown stronger until reaching its present state of perfection. The only treatment it has had being a good mulching of manure each autumn. *A. W. Brown.* [A fine specimen, but finer ones have been figured before. ED.]

THE BRITISH OAK.—I wish you could settle this question one way or the other. It has been discussed in your pages before without any certain result. The subject is a fertile source of discussion among owners of woods, who like to think they have got the true British Oak. I cannot recollect any subject that I have been oftener questioned about, hence I have taken notice of varieties of the Oak wherever I have been. I remember once a very learned naturalist coming as a visitor to where I was, and sending for me, and showing me a pedunculate acorn, enquiring if I was aware that it was the true British Oak? I replied that I knew that it was "one of them." How many did I suppose there was? he asked. Adopting his own standard of distinction, the length of footstalk, I said there were at least two dozen, because I had found acorns with stems ranging from one-eighth of an inch to about 3 in., and I promised him samples the following day, which I sent, and I heard no more on the subject. As regards soil, whatever may be the case at Chatsworth, I know that the pedunculate Oak maintains its vigour to a great age and size in some of the driest soils in England, and where the rainfall is the least—as, for example, at Lynford Hall, Norfolk. There are to be found extensive tracts of the finest Scotch Fir as regards age and quality of the timber; and amongst them and near them are to be found equally fine examples of the pedunculate Oak of all ages, and it is well known that in a wet soil the Scotch Fir will not live. The first essential to its welfare is a thoroughly dry soil, and at Lynford it grows with the Oak, and grows in such a soil. All varieties of the Oak prefer a soil that is just moist, but not a wet, let alone a "very wet" soil, in which they get sickly and covered with lichen. It is well known how the Oak behaves in such soils, and everywhere, without exception, our fine Oaks are found on well-drained soils. Where now are they to be found on really wet soils, whether planted or sown naturally? May I ask in conclusion what has become of the testimony of Mr. Robertson, head forester at Chatsworth, and well known in that capacity? I still suggest that fig. 62 in the *Gardeners' Chronicle* of September 22 shows an abortive and not immature fruit, because at the time it was gathered at Chatsworth the acorns were nearly half-swelled and plump. *J. Simpson.* [The question whether there are more than one species of British Oak is very much a matter of opinion. Botanically, we should say, there is but one species, with numerous varieties joining the extreme forms and obliterating the distinctions between them. But then other botanists might and do give specific rank to these varieties, and so long as they define their species, there is no reason why they should

not do so if they choose. It is an affair of individual judgment. From a forester's point of view, we should certainly consider the two extreme forms as quite distinct. ED.]

POTATO TRIALS AT CHISWICK.—I think that in making a trial of any new variety of vegetables, fruits, or flowers, the best of the old varieties should be grown, and an Award of Merit given to one of them should signify that the old still maintains its usefulness. Beauty of Hebron Potato deserved the award. In a trial of Grapes which Mr. Godfrey suggests, Muscat of Alexandria and Black Hamburgh would still deserve their Awards of Merit. *R. M., Newbury.*

STOKESIA CYANEA.—I must confess to a feeling of surprise on reading Mr. Thompson's note, p. 231, describing the above plant as being a July bloomer, for in South Devon, in close proximity to the sea, where I have grown it for some years, a locality far warmer than the neighbourhood of Ipswich, it has rarely expanded its earliest flowers before the middle of September. At the present date (Oct. 3), the majority of its blossoms are as yet unopened. I see from Mr. E. H. Jenkins' communication (p. 248), that, until the present year, he had been unacquainted with an early-flowering form, so I presume that form is not widely distributed. Its existence, vouched for in these two cases, is, however, a subject of congratulation to lovers of hardy flowers, since, in the drenching rains that so often occur in October, the frail petals of the *Stokesia* are hopelessly ruined—a visitation they might escape by maturing a couple of months earlier. *S. W. F.*

EUCALYPTUS AMYGDALINA.—I visited on the 4th inst. the garden of Cromla, at Corrie, in the Island of Arran. Here I gathered a corymb of flower-buds from a standard plant of *Eucalyptus amygdalina*. You will notice that the number of buds on the corymbs varies, the highest number being twelve. You will see that one has fallen off. I had been at the place on July 26, when the buds seemed almost as much developed as they are now. Should they stand the winter they will doubtless expand in early summer. I am not aware that this species has previously shown flower-buds in Scotland. Has it done so in England? The plant was received in the autumn of 1895 from Robert Birkbeck, Esq., Kinlock Hourn, Invergarry, Inverness-shire. It was then so small as to have been sent by post. This is, I believe, the species from which *Eucalyptus* oil is generally made; the finest, however, from *E. Globulus*. I may mention that *Rhododendron Gibsoni* and *R. virginale* are well furnished with flower-buds—both standards. *David Landsborough.*

—["This *Eucalyptus* is one of the most remarkable and important of all plants in the whole creation! Viewed in its marvellous height (up to 400 feet), when standing forth in its fullest development on the slopes or within glens of mountain forests, it represents, probably, the tallest of all trees of the globe; considered as a hard-wood tree of celerity in growth, it ranks among the very foremost; regarded in reference to its timber, the tall variety can fairly be classed with the superior kinds of *Eucalypts*, and contemplated in respect to the yield of volatile oil from its copious foliage, it is unsurpassed, and perhaps not equalled by any other tree in the whole world! These various signal qualities of *E. amygdalina* having become gradually known, much through the exertions of the writer, this tree has found already a wide appreciation abroad, in countries neither subject to severe frosts nor to intense moist heat." *Eucalyptographia*, by Baron F. von Mueller.]

YUCCA GLORIOSA.—I send you a photograph of *Yucca gloriosa* in flower. I planted it as a small sucker seventeen years ago, and it has flowered this year for the first time. It stands 12½ feet from the ground to the top of the spike. The photograph was taken by Patrick Blair, Esq. *James Brown, The Gardens, Bielside, Dunbar, N.B.*

"SPONTANEOUS" APPEARANCE OF EXOTICS.—Referring to the note on this subject which appeared in the last issue of the *Gardeners' Chronicle*, it has often occurred to me, when present at the Orchid and Lily sales of Messrs. Protheroe & Morris, that the soil which is entangled in the roots of the imported clumps, and brought over with the bulbs, must contain a profusion of seeds and spores, and that if it were carefully treated a number of exotic plants would

* *Thladiantha dubia*.—Bunge, *Enum. Fl. Chin. Bor.*, 29; Cogniaux Mon. Cucurbit in *D.C. Monog. Phan.* iii., 1881; Hemsley in *Journ. Linn. Soc. Bot.*, vol. xxiii., p. 316. See also *Revue Horticole*, 1861, p. 164; *Gard. Chron.*, 1861, p. 818, and 1864, p. 845; *Bot. Musc.*, t. 5469, excl. pl. ♀ et fr.; *Relig. Hort.* (1872) v. 22, p. 90, tab. c, excl. ov. fr. et sem.

develop themselves. Darwin quotes a case where some soil which had clogged the feet of a lamed partridge yielded no fewer than eighty-two plants of various species, and when we reflect upon the myriads of seeds, and the far greater number of spores, which are scattered abroad every season, and undoubtedly retain vitality for a very long time, it is clear that any foreign soil imported must contain considerable numbers, especially if attached to plants which imply favourable condi-

fact, the incomprehensibility lies rather in the rarity of the occurrence. The importation of herbarium specimens is another likely source of stray exotics, and it is recorded that several Ferns, *Lomaria Patersoni*, and *Doodia blechnoides* among them, made their appearance at Kew long before they were known as importations proper; though whether from escaped herbarium spores, or spore introductions in imported soil, it is of course impossible to determine. Ship's ballast and im-

with aluminium. Mr. E. D. Lange, of Manchester, has made a study of this question, and from the facts reported in the press this week it appears that in all probability there will be considerable reduction in the necessary amount of fuel for obtaining heat. The object of my writing to you is that I want some of the advanced workers who consume a considerable quantity of coal to try if they can obtain any better results from mixing clay with dust coal. I am informed that many years ago this used to be an ordinary practice where small coal could be easily obtained; but I have not before me any results. Suffice it to say, that if the aluminium will so marvelously increase the temperature, and as clay is the base of aluminium, it is really worth trying the experiment. I am instituting some experiments on this subject. There is another question which I have referred to in the *Gardeners' Chronicle* more than once, and that is the burning of anthracite coal in ordinary grates, and I have explained that a small piece of gas-piping about 3 to 4 inches long, fastened into the front of the grate will create a current of air so that the anthracite coal will burn with a bright white heat, naturally far surpassing the ordinary soft coal, weight for weight. It may occur to some of your readers, if such is the case, why should we not use this anthracite for the kitcheners? My reply is, that in the close ranges where the heat is required to pass over the oven, coal with a flame is necessary, hence it is best to buy the cheap kitchen coal for such purposes. In the foregoing remarks, I have not quoted the enormous degree of temperature obtained with aluminium, but if any of your readers care to follow the matter further, or if you desire to give quotations, you will find a report in a letter to the *Times*, dated Paris, September 19. *Thos. Christy*. [The ordinary Sunderland block fuel is made by mixing small coal with clay by pugging, and perhaps some coal-tar is added for binding purposes. Ed.]

PENTSTEMONS, ETC., AT JEDBURGH.—On visiting Mr. Chas. Irvine's nursery, one is struck with the large quantity of Pentstemons, the appearance of beautiful bloom, even at this late period of the season, being perfectly dazzling. A feature in Mr. Irvine's strain is the fine wide Gloxinia-like form of the flowers. In the newer varieties there are some very striking flowers in varied shades. "Mrs. Irvine" is still keeping its place in the front rank. This is a flower of a bright rosy-pink colour, with purple blotch; it has a white throat, and is slightly feathered. There is a large variety of the same type, varying in colour from the brightest scarlet to the most delicate coral, and the measurement of the individual flowers is from $2\frac{1}{2}$ to 3 inches across the mouth. The whiteness of the throat is very marked in this strain. While there is an absence of very light colours in Pentstemons, a very superior flower is to be seen in Princess May. This is a large white flower, with a slight edging of mauve. Although it is quite late for Delphiniums, there are in Mr. Irvine's nursery two or three flower-spikes of the white variety, offered for the first time this season. This new white Delphinium is a semi-double flower, and has been named Albion. The plant attains a height of from 4 to 5 feet, and is a free grower. When fully expanded, the flower is pure white, with white eye, and perfect in form. Mr. Irvine has always been up to date in Phloxes, and this year he has grown a number of fine seedlings. *James Waugh*.

THE MARKET PACKING EXHIBITS AT THE RECENT FRUIT SHOW.—Most certainly these exhibits showed marked improvement on those seen in similar classes at the Crystal Palace in previous years. There was in the work shown not only greater neatness and smartness, but there was also better quality in the fruits sent, and let the packing be ever so good, undoubtedly its merit seems to be much enhanced when the fruit samples are excellent; not in more than one or two cases did the zeal of the packers seem to induce them to raise their fruits above a safe level for pressure or loading, but the defect was much more marked last year. In the ordinary metropolitan market rounds, which of all other utensils the London market-growers seem most to favour, there were two or three cases where the stowing of the fruits had not been done with complete care, but in some others it was graded and packed with all possible care. Yet even the best of the packing in blue paper-lined rounds, useful as it may be for transit to market in vans per road, would not compare for one

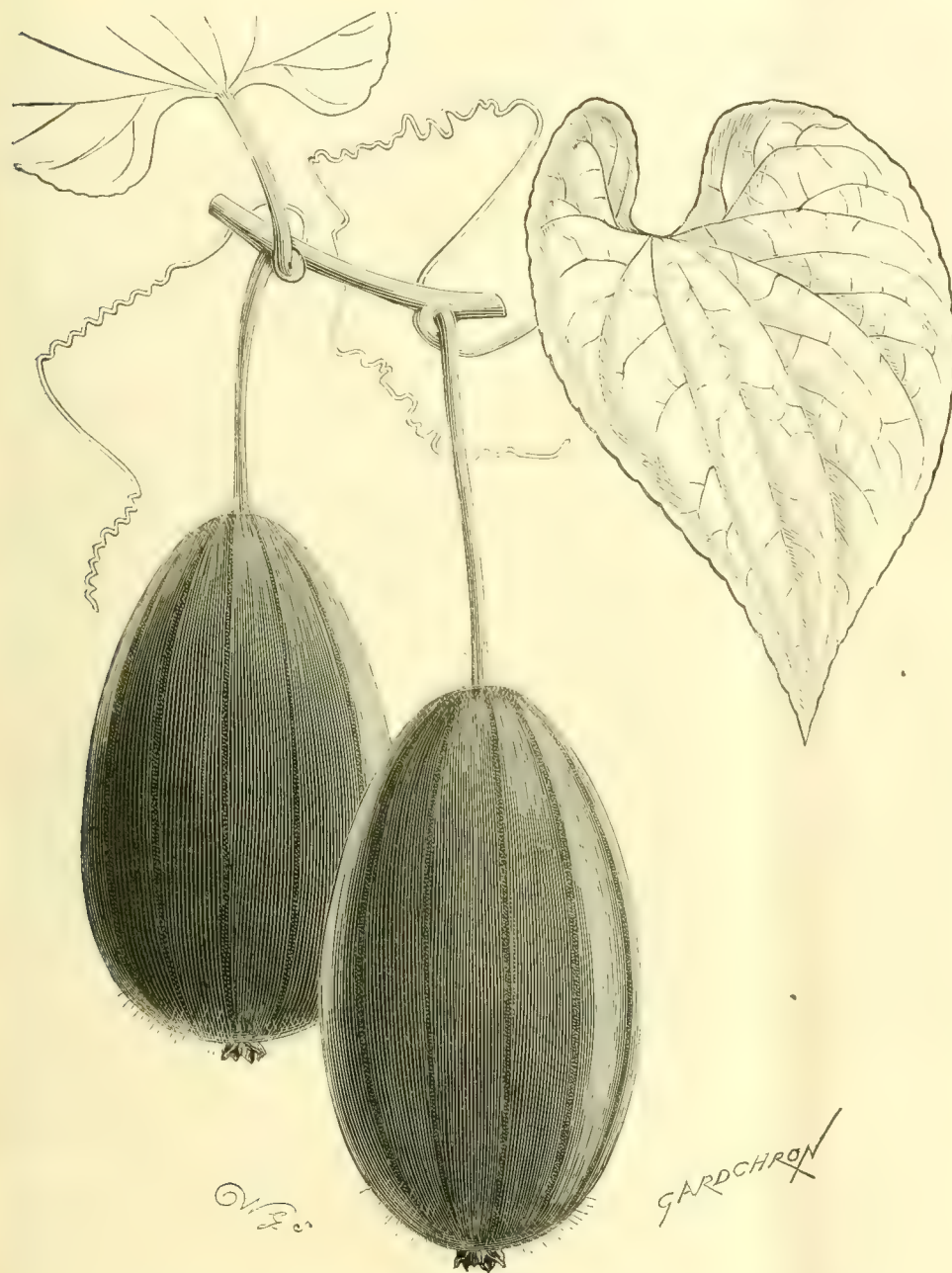


FIG. 82.—FRUITS OF *THLADIANTHA DUBIA*: DULL RED IN COLOUR. (SEE P. 278.)

(As shown by Messrs. J. Veitch & Sons, Chelsea, at a Meeting of the Royal Horticultural Society on Sept. 25 last.)

tions for vegetation. Such soil doubtless would be largely shaken out when the imported plants are brought under culture, but in the process it would become mixed to a large extent with potting or other soil in the vicinity, and sooner or later be conveyed, together with its contained germs, into quite unexpected places. Exhausted soil from pots and pans finds its way to the refuse-heap, and thence, possibly associated with manure, to any part of the gardens, the next thing to occur being a spontaneous appearance of an exotic plant in a seemingly incomprehensible manner, although considering the above

ported timber, barks, exotic nuts, and fruits generally, are all liable to introduce exotic seeds and spores, and once introduced it is a matter of pure chance how far they may travel before they find congenial conditions for germination. *Chas. T. Drury, F.L.S., V.M.H.*

FUEL FOR GARDENING PURPOSES.—The question of fuel at the present time is of the utmost importance to advanced horticulturists and fruit-growers. Some of your readers will doubtless have heard of the wonderful discoveries in connection

moment with the splendid examples of packing in flats, as staged by Mr. Basham of Bassaleg, and Messrs. Campbell & Getting of Ross, for long distance travelling by rail. So good was this as seen in these instances, grand fruits in three layers, in some on their sides, in others on their stems, laid in rows, firmly secured by wood-wool. These fruits, it seemed, might have travelled a thousand miles as easily as they had come from Wales per rail. That could not be said of the fruits packed in the market rounds. If we turn to the Grapes in baby-baskets or in cross-handled baskets generally, they were of their kinds perfect examples of packing. Nothing could have been better apparently; but it is certain that if any one has a better method for the transit of Grapes per rail long distances, then it has not been seen. Really, Grapes do, all over the kingdom, travel long journeys as sent or consigned, and come to no harm whatever. So much, however, cannot be said of the parcel post, and until some method yet unknown is devised, then is it best to entrust one's fruits to the mercies of the railway companies, and happily, these are not, as a rule, cruel. There seems to be much fear even if these fruit-packing classes be continued for twenty years, that we shall see but reproductions each year of the existing common fruit-packing utensils. That does not look hopeful for interest in the classes. There were some samples of Grapes in both forms of basket, notably Canon Hall Muscat and Gros Colmar, that were absolutely superb. No doubt every basket, box, or other package staged, had been brought there under the special care of the exhibitor. The two classes for "improvement in packing," and "improved form of package," will no doubt require some amending another year. When for several years exactly the same form of flat and same form of packing of the fruit is seen, the requirement "improved" is not in evidence. Indeed, it does seem very doubtful whether on the flat, as seen in the Welsh samples, any improvement in Apple-packing can be furnished; and large, soft Apples are far more difficult to pack well than are Pears. In establishing these packing classes the Royal Horticultural Society has accomplished all that is possible seems evident! but if anyone has a surprise in store it is hoped they will put in an appearance next year. A. D.

NEW VARIETIES OF GRAPES.—Your correspondent, "A. D.," at p. 210, does well to call attention to this subject. The Fruit Committee of the Royal Horticultural Society pronounced Messrs. Buchanan's New Grape Diamond Jubilee to be identical with the old and little grown Black Morocco. Messrs. Buchanan have surely evidence that would prove their new introduction to be really new and distinct from Black Morocco. Their advertisements contain testimonials from eminent Grape growers and honourable men; and the matter should not be difficult to clear up. The suggestion that new Grapes should be tested by cultivation at Chiswick prior to awards being made is too slow a process, and the Fruit Committee is, or should be, quite competent to deal with all fruits on their merits when placed before them. R. M., Newbury.

THE POTATO CROP in this district is much more satisfactory than we expected it would be. The earlier varieties, as Ashleaf, Sharpe's Victor, Ringleader, and Ninetyfold, were later and smaller than usual, mainly owing to the soil remaining wet and cold until the end of May. The quality of the tubers when cooked was quite up to the average. The second earlies, as Duke of Albany, Snowdrop, &c., have produced good crops of tubers of fair size, and those which were lifted before the middle of August were quite free from disease; but those left in the ground after that date were found to be badly attacked, especially the coloured sorts, such as Prizetaker, Basford Beauty, Reading Russet, &c. The later varieties, which have been grown in the old cottage gardens, are in a very bad state, but the same sorts in the fields are almost free from disease; Up-to-Date and Robust, are varieties which have shown most disease. The field crops are in quantity and quality very favourable in this neighbourhood. Geo. Woodgate, Rolleston Hall Gardens, Burton-on-Trent.

LYCHNIS GRANDIFLORA.—It would seem as if this plant was being distributed as a novelty, which is scarcely in accordance with facts. It is certainly a rare plant, a good plant, and a most desirable garden plant, but I think it should be stated that

it has been in cultivation within the last two decades at least. Indeed, I have had the identical subject of your excellent illustration at page 205, in my own keeping on several occasions within the last twenty-five years, though not more recently, so far as memory serves me, than about 1880 or 1882. This date is amply confirmed too, by an old list now before me, issued in 1878, with the plant catalogued at the nominal price of one shilling and sixpence. As the list to which I refer is that of a firm issuing periodical lists of only such things as would then be in stock, I place reliance on the point. I was unfortunately not present at the Drill Hall when the plant was shown recently, but the hardy plant foreman of Messrs. Jackman's, kindly sent me a small bloom for my inspection, which I subsequently recognised. Should it prove hardy, it will be an acquisition, both in point of colour, and time of flowering, for, as Mr. Arnott has well said, the colour is hardly represented among perennials at its season of flowering. I fear, however, the fact that the plant has been repeatedly in cultivation hitherto—for it is also said to be among the earlier figures in the *Botanical Magazine*—is rather opposed to this. The plant has so gone out of cultivation, that this circumstance would point to its not being generally hardy, or that the plants were always too weak to stand a fair test for hardiness. I am rather surprised that a damp spot is recommended for it, for I should have recommended just the reverse, accompanied by deep planting. I am less surprised at the success of the plant in summer under the moist conditions, for this is obvious. But there is a succulent peculiarity in the root-stock of this section of the *Lychnis* that is soon injured by severe frost. For this reason, I suggest deep planting. All the same, I hope so distinct and welcome a plant may yet become established, for it is one that I feel sure many will welcome. But it must be hardy to warrant general culture, or hardy within the limits of ordinary care, or slight special attention. Seeds of course will be looked for. Generally, this plant is bracketed with *L. coronaria*, but not always. The *L. coronaria* of the *Dictionary of Gardening*, is however most distinct from the present plant in a variety of ways, being of a decidedly branched habit, and with peduncles one-flowered. The description given in *Don's Gardening Dictionary*, fits the present plant fairly well, except in colour, which is given as "beautiful scarlet, pale beneath." Then in a note at foot on the culture of the species, is the following:—"L. fulgens and grandiflora are truly elegant plants; these may be also increased by cuttings." Further on, it is stated "L. grandiflora will thrive well and flower abundantly if planted out on the border in spring; but it requires to be taken up in the autumn and potted, or the frost will kill it." As to the "cuttings," I hardly see where these would come from unless it be of the young shoots in spring, and which of course would be flowering-shoots, and *Lychnis*, generally, is not a good plant to strike from cuttings. It would be interesting to learn how far the original figure in the *Botanical Magazine* agrees with the plant now figured. E. H. Jenkins, Hampton Hill.

the highest award—a Gold Medal—was awarded to a collection of fruits from Lord Wantage. This Committee recommended a First-class Certificate to Plum President, from Messrs. RIVERS & SON; an Award of Merit to Apple Rival, from Mr. C. ROSS, and to Melon Free Chase Favourite from Sir Geo. Allen.

Floral Committee.

Present: W. Marshall, Esq. (in the Chair); and Messrs. O. Thomas, C. T. Drury, H. B. May, W. Howe, Jas. Hudson, Jno. Jennings, C. R. Fielder, J. D. Pawle, Geo. Gordon, Jas. Walker, Herbert J. Cutbush, H. J. Jones, J. Fraser, and G. Paul.

Privets were exhibited in great variety by Mr. J. RUSSELL, Richmond Nurseries, Richmond, Surrey. They were excellent specimens in pots, and we noticed among others *Ligustrum vulgare*, with its numerous, small, black fruits; *L. v. aureum marginatum*, *L. v. glaucum marginatum*, *L. lucidum*, *L. l. longifolium*, with leaves 5 inches long; *L. l. robustum macrophyllum*, *L. japonicum*, and several of its variegated varieties; *L. ovalifolium*, *L. o. aureum*, and *L. Itoa* (Silver Banksian Medal).

Messrs. J. HILL & SON, Barrowfield Nurseries, Lower Edmonton, made an exhibit of *Ficus radicans variegata*, in pots—much as *Opismenus Burmanni* is cultivated, also upon Fern-stems, and in several ways. All the plants were much variegated with white, some of the leaves being wholly white. The plant was recommended a First-class Certificate in 1897 (see *Gardeners' Chronicle*, Aug. 28, 1897, p. 149). It is almost as effective as the more delicate plant named above, and its more hardy character will render it useful in conditions that *Opismenus* would suffer under. Amongst these plants were some of *Adiantum tenerum Farleyense*, *Nephrodium lepido*, and several *Selaginellas*, &c. (Silver Banksian Medal).

One of the most handsome exhibits of sprays of ornamental trees and shrubs (autumn tints) we have ever seen in the Drill Hall was made on this occasion by Capt. HOLFORD, Westonbirt, Tetbury (gr., Mr. A. Chapman). The varieties of Oak, Acer, Azalea, Crataegus, Rhus, Pavia, Parrotia, C. tomentosa, Carya, Viburnum, Prunus, Cornus, Symphoricarpos, Viburnum, Spiraea, Euonymus, Berberis, Liquidambar, Aene-lanchier, Philadelphus, Pyrus, Ilex, &c., were so numerous, that it would be impossible for us to enumerate them. These sprays furnished one half width of a long table in the Hall, and they not only represented most of the finest shrubs that take on autumn tints, but they were coloured to a degree that in many districts and soils they would never attain. If we mention a few of those that were more striking than the others, we should include *Euonymus alatus*, a species with curiously winged stems and bright red leaves; *Acer saccharinum*, *Carya glabra* and *C. tomentosa*, *Rhus typhina*, *Quercus coccinea* Waterer's var., *Pavia flava*, *Quercus americana rubra*, *Q. coccinea*, &c. (Silver-gilt Flora Medal).

Bouvardias were capitally shown by Mr. H. B. MAY, Dyson's Road Nursery, Upper Edmonton, who had a collection of well-grown plants abundantly bloomed, that furnished one half of a long table. There were twenty-five varieties, and the group was composed of smaller groups of six or so plants of each variety placed together. All the useful old varieties were shown, and two new ones, named, respectively, *Fride of Brooklyn* (single white), and *Bridesmaid* (double pink), both of them possessing considerable merit. *Bridesmaid* differs from the well-known President Garfield, in that the exterior of its corolla is very deep pink, instead of white, as in the older variety. Delicate, a single-flowered, blush-tinted variety, is also a new one. The exhibit included a few plants of *Begonia Gloire de Lorraine*, var. Mrs. Leopold de Rothschild (Silver Banksian Medal).

The floor in the centre of the hall was occupied by a large group of plants of *Salvia splendens* nana, and *S. s. grandiflora*, shown by LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. J. Hudson). Both varieties were shown in good condition, and amongst them were exhibited a few plants seven feet or more high, of scented varieties of *Pelargonium*. The dwarfier variety of *Salvia* is said to come into bloom much earlier than *S. splendens grandiflora*, or even *S. splendens*. (Silver-gilt Banksian Medal).

Messrs. WM. PAUL & SON, Waltham Cross Nurseries, Herts., again exhibited a collection of Roses, including a number of varieties that have been raised from crosses between Tea-scented and Chinese Roses. These seedlings are very decorative, and are said to be free and late bloomers. Some of those decorative Teas we have described in these pages already were also well shown, as *Corallina*, *Alexandra*, *Enchantress*, &c.

Mr. WILL TAYLER, Osborn Nursery, Hampton, also showed Roses, having a collection of fine blooms, in which there were some good blooms of exhibition Tea varieties (Silver Banksian Medal).

Mr. H. ELLIOTT, Courtbushes Nurseries, Hurstpierpoint, Sussex, exhibited some seedling varieties of Nerine, raised by himself; several of them were very attractive. One variety is mentioned under Awards; and in addition to that, we think one named Elliott very beautiful.

Messrs. J. BACKHOUSE & SON, York, showed *Colchicum speciosum album*, and *C. s. atro-rubens*. Some of these varieties were staged in very praiseworthy condition, the flowers being larger and stronger than we have previously seen them. It will be remembered that *C. s. album* was recommended a First-class Certificate at the last meeting of the Society.

Messrs. W. WELLS & CO., Earlswood Nurseries, Redhill, Surrey, made quite a show with *Chrysanthemum* blooms. Among the varieties displayed were White Quintus, Miss

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 9.—At the usual fortnightly meeting of the Committees on Tuesday last, the Drill Hall, Buckingham Gate, Westminster, was well filled with a great variety of exhibits. Owing to the genial character of the weather during the present month, there are plenty of Roses and Dahlias fit for exhibition now that the season of the Michaelmas Daisies and the *Chrysanthemums* has commenced.

The ORCHID COMMITTEE recommended two Botanical Certificates, and one Award of Merit, the Award of Merit being in respect to a variety of *Lælia pumila*, from Messrs. Low & Co.

The FLORAL COMMITTEE had a large number of groups of various kinds for inspection, and none was more interesting than an exhibit of autumn leaves, from the gardens of Captain HOLFORD, at Westonbirt, which occupied the whole of one side of a table reaching the whole length of the Hall. These beautiful sprays of hardy shrubs made one long to go and see them in all their beauty at home. This Committee recommended as many as twelve Awards of Merit, of which three were to varieties of Michaelmas Daisies, two to *Kniphofias*, one to a *Dahlia*, and one each to a *Rose*, *Cordylone*, *Nerine*, *Chrysanthemum*, *Cupressus*, and *Polygonum*.

The FRUIT COMMITTEE were called upon to adjudge the merits of a number of collections of fruits and vegetables, and

Ruth Williams (yellow), Mrs. Wingfield (mauve), Anne Bowman (mauve), Mychett White, &c., all of which are excellent decorative sorts, with rather largesized blooms. Also some of the earlier flowering section, such as Jules Mary; Miss Rose (single), was very pretty (Silver Banksian Medal).

Chrysanthemums were also exhibited by Mr. JAS. WILLIAMS, College Park Nursery, Lewisham, S.E., who showed finely-flowered plants of the white variety Lady Fitzwygram; also of a yellow-flowered sport from the above, named Mrs. James Williams, and a very similar sport named Primrose Queen.

Sweet Peas were again shown by Messrs. W. W. JOHNSON & SONS, Boston, Lincolnshire, who had about fifty bunches of flowers, a testimony to the remarkable weather of the present month.

Mr. THOS. S. WARE, Ltd., Hale Farm Nurseries, Feltham, exhibited a collection of hardy flowers, including Dahlias, which were shown well and in good variety, Gladioli, and varieties of Michaelmas Daisies (Silver Banksian Medal).

Lord ALDENHAM, Aldenham House, Elstree, Herts (gr., Mr. E. Beckett), showed about a score varieties of Perennial Asters, most of them seedlings. Several of these are alluded to under Awards.

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., exhibited a fine collection of varieties of Michaelmas Daisies, some Pentstemons of a large-flowered strain, Dahlias, and early-flowering Chrysanthemums (Silver-gilt Banksian Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, exhibited a group of perennial Asters, in which were represented about forty varieties. The plants were abundantly flowered, and had been lifted from the open ground and put into pots, as were some Kniphofias that were interspersed with them. Messrs. VEITCH also exhibited a plant in bloom of the beautiful Solanum Wendlandi, and a quantity of cut blooms of their cross bred greenhouse Rhododendrons. Plants of Hydrangea Hortensia Mariessii were covered with their large heads of flowers.

Miss ARMITAGE, Ross, Herefordshire, showed some varieties of Gypsophila and perennial Asters.

Awards.

Aster (Perennial) Capitatus.—A seedling from the variety Pleiad, having flowers 1 inch across of palest pink colour; height 4 feet. From Lord ALDENHAM (Award of Merit).

Aster (Perennial) The Hon. Edith Gibbs.—A seedling from A. ericoides elegans, having very small flowers of palest lavender tint; height 5½ feet. From Lord ALDENHAM (Award of Merit).

Aster (Perennial) Hon. Victoria Gibbs.—A seedling from Pleiad. The flowers are deep pink colour, and ¾ inch across; height 3 feet. From Lord ALDENHAM (Award of Merit).

Chrysanthemum Mrs. James Williams.—A light yellow sport from the well known variety Lady Fitzwygram, possessing the same habit as that variety. From Mr. JAS. WILLIAMS, College Park Nursery, Lewisham, S.E. (Award of Merit).

Cordylus (Drosera) affinis.—The leaves are 1 inch wide, deep bronzy-green with red margins, the tips of the leaves very pendent. From JOHN WARREN, Esq. (Award of Merit).

Cypripedium Lawsoniana pinnatifida argentea.—This is a form of the dwarf-growing Lawson's Cypripedium, having partially variegated foliage; but as shown, the variegation would appear to be creamy rather than silvery or "argent." Three pretty little plants were shown by Messrs. J. BAKHOUSE & SON, York (Award of Merit).

Dahlia Mrs. H. J. Allcroft.—This is a seedling variety of true Cactus form, rather large in size, and of rich salmon colour. From Mr. S. MORTIMER, Rowledge Nurseries, Farnham Royal (Award of Merit).

Kniphofia "Triumph".—The flowers of this variety are yellow, but the unexpanded buds at the apex of the spike green. The flower-spikes are very stout, and of unusual length. It is certainly one of the best varieties we have seen of this colour. From Messrs. BARR & SONS, King Street, Covent Garden, London (Award of Merit).

Kniphofia Leichlini aurea.—A very effective variety. From Messrs. BARR & SONS (Award of Merit).

Nerine Purple Prince.—A large, deep crimson flower of much substance, with wide segments. The essential organs are very much less in length than in most Nerines. From Mr. H. J. ELLIOTT, Huispierspoint (Award of Merit).

Polygonum orientale.—This is a very old plant indeed, having been introduced to this country early in the eighteenth century. It grows 5 feet high or more, and has large ovate, acuminate leaves. The flowers are rosy-purple, produced in drooping racemes. It is a hardy annual, and may easily be grown from seeds. From Mr. J. HUDSON, Gunnersbury House Gardens (Award of Merit).

Rose Morning Glow.—A very beautiful Tea variety, with large, very full flowers of reddish-salmon colour, shaded with light purple. The variety may be described as a decorative rather than exhibition Tea. From Messrs. W. PAUL & SON (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. JAS. O'Brien (hon. sec.), J. Gurney Fowler, De B. Crawshaw, H. M. Pollett, H. Little, H. J. Chapman, H. A. Tracy, W. H. Young, W. H. White, W. Cobb, E. Hill, C. Winn, T. Rochford, A. H. Smea, and J. Douglas.

The Right Honble. JOSEPH CHAMBERLAIN (gr., Mr. Smith) exhibited the only group staged, and it was remarkable as containing a well-flowered Cattleya Bowringiana, and also

several hybrids of it, which, like their parent, are deeply useful in that they produce their showy flowers in autumn and early winter. Cattleya × Mantini (Bowringiana × aurea) was shown in a good typical form, and with it C. × Mantini superba, a very fine flower, with the sepals and petals of a claret-tinted rose colour, the broad lip being white at the base, changing to dark red, with orange veining, in front of which was a dark purple zone extending into the rose-purple front portion. Another pretty hybrid was Cattleya × Bowringiana-velutina var. Hilda, with the rose-purple sepals and petals of C. Bowringiana, but the circular-fronted lip of C. velutina. The narrow tube formed by the side-lobes folded over the column was bluish-white, the central crest yellow, with dark purple lines passing into the rose-purple blade of the lip. Mr. CHAMBERLAIN also showed Lælio Cattleya × Duke of York (L. C. × elegans × C. Brymeriana), a fine, light rose-coloured flower of the form of L. C. × Atlanta, but with larger carmine-crimson lip; the pink-tinted Cattleya × Minuca; and Dendrobium Phalaenopsis Chamberlain's variety, of large size, the sepals tinged with rose, and veined purple, the margin being white, the petals more heavily coloured. Lip white, with yellow disc, and rose front lobe, veined with dark purple.

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), showed a spike of a very fine variety of Vanda Sanderiana, the upper portions of the dorsal sepal and petals being freckled with bright rose colour, the lower parts and the lateral sepal yellowish veined with chocolate-purple; a good plant of Maxillaria striata, with yellow sepals and petals bearing reddish lines, and white lip veined with purple on the side lobes; Angraecum citratum with three racemes; spikes of the pretty Epidendrum sceptum, the red-flowered Masdevallia × Ajax superba, and Cirrhopetalum maculosum.

The Hon. WALTER ROTHSCHILD, M.P., Tring Park (gr., Mr. E. Hill), showed Cattleya × Maroni "Tring Park" variety, a very striking and peculiarly tinted flower. The flowers, which were 6 inches across, had the sepals and petals of a bronzy-yellow hue. Lip golden-yellow at the base streaked with purple, the lines getting lighter in colour as they passed to the rose-tinted margin.

W. E. BRYMER, Esq., M.P., Dorchester, sent flowers of a plant raised between Cattleya Mendeli and Lælio-Cattleya × elegans, of medium size. Sepals and petals pale lilac; lip yellow inside, front lobe purple.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), showed flowers of Cattleya labiata "The Portant," a large white, with pink tinge on the front of the lip; and Lælio-Cattleya × Ingrami (Lælia Dayana × Cattleya aurea).

Messrs. J. VEITCH & SONS, Chelsea, showed Cattleya × Chloe (Bowringiana × bicolor), with bright purple flower, the extended front lobe of the lip being dark velvety purple.

Captain HOLFORD, Westonbirt, Tetbury (gr., Mr. A. Chapman), showed two very fine light-coloured Dendrobium Phalaenopsis, some grand flowers of Dendrobium fornosum giganteum, and hybrid Cypripediums.

Messrs. HUGH LOW & CO., Bush Hill Park, showed Cattleya Bowringiana "Low's" variety, a very large and finely-coloured flower; Cattleya Loddigesii gigantea, Lælio-Cattleya × Aurora, and a white form of Lælia pumila.

HENRY LITTLE, Esq., Baronshalt, Twickenham (gr., Mr. Howard), showed Cattleya aurea and C. aurea superba, the latter a very fine variety, with yellow sepals and petals, the petals having a purple freckling inside the margin, and rich ruby-purple lip, exquisitely veined with orange; also a fine spike of Cattleya Bowringiana.

Awards.

Lælia pumila, Bush Hill variety, from Messrs. HUGH LOW & CO., Bush Hill Park. Flowers white, with a pink tinge on the labellum (Award of Merit).

Gongora nigrilis, from F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin. A fine species from Guiana with flowers comparable to those of G. maculata, in colour cream-white, with red lish-brown markings. A showy flower for a Gongora (Botanical Certificate).

Cirrhopetalum maculosum guttatum, from Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White). A pretty form of the plant known in gardens as Bulbophyllum umbellatum. Flowers in umbels, cream white with purple spots (Botanical Certificate).

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman; and Messrs. W. Wilks, H. Eslings, W. Poupert, E. Shaw Blaker, A. F. Barron, A. H. Pearson, W. Pope, Alex. Dean, S. Mortimer, Geo. Kelf, F. Q. Lane, Jas. Smith, Geo. Reynolds, E. Beckett, and Geo. Wythes.

The most attractive of the collections of fruits staged was one from Lord WANTAGE, Lockinge Park (gr., Mr. Fyfe). This exhibitor had a tastefully arranged collection at the last Temple Show, and gained a Gold Medal. We subsequently reproduced a photograph of the exhibit in these pages. Of Grapes shown on Tuesday last, there were Lady Downes, Muscat of Alexandria, Gros Colmar, and Black Alicante, all of them very good, and some represented by six bunches. They were exhibited on stands previously described in these columns. They consist of three legs, and the two front ones contain holes, into which pegs are placed at the height it is wished to display the fruit. They are adjustable, and a great improvement upon the common method of showing Grapes. Apples, Pears, Plums, Peaches, Morello Cherries, and six Melons, were also shown in capital condition, and some of the fruits were displayed on ornamental stands. The whole of the

collection was staged over a white surface, the table having first been covered with paper (a Gold Medal).

J. WARREN, Esq., Handcross Park, Crawley (gr., Mr. A. Offer), exhibited 100 dishes of Apples and Pears. The fruits were of capital quality and well set up. Apples Lady Henderson, Wealthy, and Washington, were particularly worthy of notice. The Pears, too, were very good, and a dish of fruits of Marguerite Marillat most attractive (Silver-gilt Knightian Medal).

W. E. S. ERLE DRAX, Esq., Olantigh Towers, Wye, Kent (gr., Mr. J. Boud), showed an excellent collection of vegetables, in which the Carrots, Onions, Tomatoes, and Cauliflowers were particularly attractive (Silver Knightian Medal).

Messrs. ROBERT VEITCH & SONS, Exeter, again exhibited fruits of Peach Late Devonian, and fruits of Apple Royal Snow. These latter were of medium size and very highly coloured. The variety was figured in these pages, Jan. 1, 1898, p. 11.

Mr. C. ROSS, gr. to Captain CARSTAIRS, Welford Park, Newbury, exhibited seedling varieties of Apples, and one of these gained an Award. Several other exhibitors had also seedling Apples.

Dr. BONAVIA sent ripe fruits of the Cape Gooseberry, Physalis peruviana, and was awarded a Cultural Commendation.

C. BAYER, Esq., Tewkesbury Lodge, Forest Hill, London (gr., Mr. W. Taylor), exhibited a praiseworthy collection of fruits; there were Gros Guillaume, Foster's Seedling, Directeur Tisserand, Gros Colmar, Muscat of Alexandria, Gros Maroc, Black Alicante, Trebbiano, Lady Downes, Chasselas Napoleon, and Mrs. Pince; also six dishes of Apples, five of Pears, one of Figs, one of Coe's Golden Drop Plum, and three of Tomatoes (Silver-gilt Knightian Medal).

Sir MARCUS SAMUEL, The Mote, Maidstone (gr., Mr. W. H. Bacon), exhibited a collection of fifty dishes of Pears. They were commendable specimens, and the following were ripe: Beurre Superfin, Fondante de Cuern, Princess, Louise Bonne of Jersey, Durondeau, Triomphe de Vienne, Pitmaston Duchess, Directeur Hardy, Marie Louise, and Marie Louise d'Uccle (Silver Knightian Medal).

Mr. JOHN WATKINS, Pomona Farm, Withington, Hereford, exhibited eighteen varieties of Crabs (Silver Knightian Medal).

An excellent collection of vegetables was set up by Messrs. H. CANNELL & SONS, Swanley, Kent. There were about forty dishes of Potatoes, the tubers being very good in appearance, and clean-skinned; Cannell's Autumn Giant Cauliflower, Intermediate and other Carrots, Ailsa Craig Onions, Tomatos Yellow Trophy, Cannell's King (red), and others; Brussels Sprouts, First Prize Parsnips, Cannell's Defence Cabbage, &c. This is a splendid type of Cabbage, and is of very attractive appearance. Messrs. CANNELL also showed a collection of Apples and Pears in about 100 dishes. There were some grand Apples, of which we observed Collini, Blenheim Orange, Peasgood's Nonsuch, Wadhurst Pippin, Gascoigne's Scarlet, Bismarck, Cox's Orange and Ribston Pippins, Stirling Castle, More de Menage, &c. Many of the Pears also were of first class quality; they included Louise Bonne of Jersey, Doyenné du Comice, Pitmaston Duchess, Princess, Marie Louise d'Uccle, &c. (Silver Knightian Medal).

A third exhibit from Messrs. CANNELL consisted of ornamental Gourds, Squashes, &c. It was a very interesting group, and included many of very diverse shapes (Silver-gilt Knightian Medal awarded for vegetables and Gourds).

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. J. Hudson), showed half-a-dozen or so young Fig-trees in pots. They were carrying a nice quantity of fruits, and were recommended a Cultural Commendation.

Messrs. J. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited fruits of Chiswick Peach Tomato. The colour of the fruits is just like that of Coe's Golden Drop Plum, and the flavour s almost as pleasant.

Autocrat Peas and beans, from Messrs. VEITCH, were in very commendable condition.

Awards.

Apple Rival.—This is a seedling Apple from a cross between Peasgood's Nonsuch and Cox's Orange Pippin. The fruits are of moderate size, and highly coloured on almost every side. The eye is very open, and set in a deep, regular, basin-like cavity; stem slender, also set in a very deep funnel-like cavity. A very attractive fruit. From Mr. C. ROSS, Welford Park Gardens (Award of Merit).

Melon Free Chase Favourite.—A white-fleshed variety, with loosely netted exterior. Flavour good. From Sir GEORGE ALLEN, Free Chase, Hayward's Heath, gr., Mr. Meads (Award of Merit).

Plum President.—A very large, egg-shaped, purple-fruiting variety, of great value as a late fruiter, and a free cropper. This Plum was awarded an Award of Merit in 1895. From Messrs. T. RIVERS & SON, Sawbridgeworth (First-class Certificate).

The Lecture.

CULTIVATION OF FIGS IN POTS.

In the afternoon a lecture was given by Mr. Jas. Hudson, V.M.H., on the cultivation of Fig-trees in pots, in which some very good reasons were urged in favour of the adoption of this method of cultivation in certain circumstances, in place of trees planted in a border and trained to a trellis. Mr. Hudson said that the cultivation of Fig-trees in pots in the Royal Horticultural Society's gardens at Chiswick had been an object lesson for years past, and had done much to encourage the practice in other gardens. Mr. Hudson gave cultural details, which if followed will provide ripe Figs from the middle of February until early winter. The variety St. John was described as the best for early forcing, being a very free fruiter in pots, though too strong a grower if planted out. For practical purposes, said Mr. Hudson, the varieties St. John and Pingo de Mel are the same.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

SEPTEMBER 27.—Present: Messrs. G. Shorland Ball, J. Cypther, J. Robson, W. Holmes, and P. Weathers (Hon. Sec.). J. LEEMAN, Esq., West Bank, Heaton Mersey (gr., Mr. Edge) staged a very good group of plants; his *Odontoglossum crispum* var. *Amy* was selected by the Committee for an Award of Merit. It is a fine flower, and well spotted. *Cattleya* × *Maroni*, Leemann's var., also received an Award of Merit; *Cattleya* × *Fabia*, var. *Brunoy*, a hybrid between *C. labiata autumnalis* × *C. aurea* received a First-class Certificate by acclamation. A Silver-gilt Medal was awarded to the group.

R. ASHWORTH, Esq., Newchurch (gr., Mr. Pidsley), sent a few choice plants, the best of which was *Cypripedium* × *gigas* *Corndean* var., which received an Award of Merit; the same award being given to a fine piece of *Miltonia candida* var. *grandiflora*.

T. STATTER, Esq., Stand Hall (gr., Mr. Johnson), sent a finely-grown and flowered plant of *Dendrobium Victoria Regina*, for which a Cultural Certificate was voted. The same exhibitor sent a hybrid between *Cattleya Bowringiana* × *Laelia tenebrosa*.

E. O. SCHNEIDER, Esq., Whalley Range (gr., Mr. Hunt), sent a nice plant of *Cattleya Schofieldiana*.

A. Z. LEES, Esq., Stretford (gr., Mr. Jones), exhibited a good form of *Cypripedium Charlesworthi*, and *Laelia præstans*.

Mr. P. WEATHERS exhibited *Cypripedium Charlesworthi* album, which was obtained from Messrs. Charlesworth. It is a very interesting and beautiful "albino" form of the type, and will rank as one of the best of the albinos (First-class Certificate). The same exhibitor obtained an Award of Merit for a fine form of *Cypripedium Harrisianum*.

Mr. J. CYPHER, Cheltenham, received an Award of Merit and a Cultural Certificate for *Cattleya* × *Mantini* var. *inversa*; *Cypripedium Leonie*, from the same owner, received an Award of Merit.

MESSRS. CHARLESWORTH & CO., Heaton, Bradford, had a striking display of novelties. In addition to the *Cypripedium Charlesworthi* album, noticed above, this firm had *C. × Maudiae*, a hybrid albino, between *C. Lawrenceanum* × *C. callosum Sanderae*. It received a First-class Certificate. In form it is not so graceful as the latter parent, but it has a fine bold character. First-class Certificates were awarded to the same firm for a magnificent variety of *C. × Laurebel*, and a fine plant of *C. callosum* var. *Sanderae*; while the second grade Award was given to *C. × Mrs. Fred Hardy*, and to two magnificent varieties of *Laelia præstans*. A Silver Medal was awarded for the group.

Mr. J. ROBSON, Altrincham, exhibited a bright group of plants. A very handsome form of *Dendrobium Phalenopsis* was selected for an Award of Merit. *Odontoglossum crispum* *Altrinchamense* was also shown, but the Committee desired to see the plant again. A Silver Medal was awarded for the group.

Mr. A. J. KEELING exhibited a good form of *Cypripedium Charlesworthi*.

MESSRS. SANDER & CO. staged a few Orchids, none of which, however, came under the notice of the Committee.

SCOTTISH HORTICULTURAL.

OCTOBER 2.—At a meeting of this Society, held on the above date, a paper was read by Mr. R. W. E. MURRAY, Blackford House, Edinburgh, on "Japanese Chrysanthemums for Exhibition." Mr. McKENZIE, of the Warriston Nurseries, presided, and twenty-six new members were elected.

Mr. MURRAY said it was wise to see what space was available, and to grow only as many Chrysanthemums as could be cultivated well. Any good loam with a little sand added, was sufficient for Chrysanthemums. Little or no manure was needed beyond a handful of bone-meal. Mr. Murray gave some excellent instructions upon the cultivation of Chrysanthemums generally, and subsequently there was an interesting discussion.

KENT COUNTY FARM-FRUIT.

OCTOBER 2, 3.—The annual show of this Society was held in the Corn Exchange, Maidstone. The majority of the fruits was shown in baskets and sieves, and the classes were open to farmers and market-growers. Some very fine fruits were shown.

In a class for the best collection of fruits not exceeding twenty-four dishes, open to landlords (or their gardeners), tenant-farmers and market-growers, Mr. Woodward, gr. to ROGER LEIGH, Esq., Barham Court, was 1st, with a fine exhibit; Mr. BACON, gr. to Sir MARCUS SAMUEL, was 2nd.

In the following classes for eighteen dishes of Apples and six of Pears, open to Great Britain and the Channel Islands, Mr. Woodward was again 1st; and Mr. Lewis, gr. to R. H. B. MARSHAM, Esq., East Sutton Park, 2nd.

Prizes for home made jams, the Kent County Potato Challenge Shield, also poultry and eggs, were competed for.

The SOUTH-EASTERN AGRICULTURAL COLLEGE, Wye, exhibited (not for competition) a collection of Apples and Pears in over sixty varieties, some very fine Tomatoes, and a collection of Bismarck Apples, which have been grown to show the result of various experiments with manures.

MESSRS. FROST & CO., of the Borough and Link Nurseries, Maidstone, showed Cactus Dahlias.

The new Apple, Charles Ross, was shown by Messrs. HORNE & SONS; and Mr. BACON, gr. to Sir MARCUS SAMUEL, arranged a group of miscellaneous plants.

Most horticultural societies are dependent on the public who visit their shows for financial support, and it would be as well if the Committee could arrange a few classes for hot-house fruits; hardy fruits, principally consisting of Apples, become rather monotonous to visitors.

NATIONAL CHRYSANTHEMUM.

OCTOBER 9, 10, 11.—The first of the three autumn exhibitions of the National Chrysanthemum Society was held in the Royal Aquarium, Westminster, and was a very good one. The competitive classes were very largely aided by many honorary exhibits of an attractive character. The exhibition was admirably arranged on the ground floor of the building.

CUT BLOOMS

necessarily formed a leading feature. Of these, the best twenty-four Japanese, the premier class, brought four competitors, Mr. F. AGATE, of Havant, being placed 1st, with, for the time of year, excellent flowers, among which were *Florence Molyneux*, Miss G. Pilkington, Jane Molyneux, Soleil d'Octobre, Mons. J. Bruant, Sir H. Kitchener, Baden Powell, Mrs. Coombes, Mrs. W. Popham, and others; Mr. NORMAN DAVIS was 2nd.

In the open class for twelve blooms, Mr. H. Jones, gr. to C. A. SMITH RYLAND, Esq., Warwick, was a good 1st, with fine blooms of Mrs. W. Popham, Mrs. J. Shrimpton, Mrs. Coombes, Lady Crawshaw, Lady Byron, &c.; Mr. AGATE coming 2nd, and Mr. NORMAN DAVIS 3rd.

In a corresponding class, limited, Mr. H. LOVE, Sandown, Isle of Wight, and Mr. W. SILSBURY, Shanklin, took 1st and 2nd prizes.

Mr. NORMAN DAVIS had the best six blooms, including President Nonin, Mrs. Curshaw, and Madame Von Andre; Mr. TAYLOR, of Chislehurst, coming 2nd.

Mr. DAVIS had the best six flowers in one variety in excellent Madame Von Andre, pale yellow.

Bunches of early flowering varieties were well represented, Mr. Wyman, gr. to C. SORFER, Esq., Reigate, being 1st in the chief class, and Mr. ERIC SUCH, Maidenhead, 2nd. Both had good varieties, including Blushing Bride, Madame Marie Masse, Madame E. Leport, Lemon Queen, Crimson Queen, and others.

With six bunches, Mr. J. BROOKS, Totteridge, was 1st, and Mr. E. H. CHITTY, Highgate, 2nd; the varieties in this case being largely repeated.

Vases and similar exhibits were numerous, and mostly very effectively arranged. Mr. JAMES BROOKS had the best pair of vases, each containing twelve large blooms with diverse foliage; and Mr. TURK the best single vase of Pompons, a very pleasing arrangement; Mr. E. CHITTY coming 2nd.

Miss E. BALE, of Feltham, had the best three epergnes, charmingly dressed with small yellow and bronze Chrysanthemums; Mrs. W. GREEN, of Haroldwood, Essex, coming 2nd, with large yellow flowers only.

There were numerous capitally-dressed baskets of autumn foliage and berries. Miss EASTERBROOK, Fawkham, Kent, having the best; Miss COLE being 2nd. Physalis Franchetti was much used in these baskets.

Pompon Chrysanthemums in bunches of three flowers came from Mr. TURK and Mr. D. B. CRANE, Highgate, in the larger class; in the class for six bunches, the flowers were poor. Very few incurved flowers were staged, and those exhibited had little merit.

With groups of Chrysanthemums arranged for effect, Mr. Howe, gr. to Lady TATE, Streatham, was 1st, the flowers being good, but the grouping rather stiff; Mr. E. DOVE, gr. to H. A. FRY, Esq., Bickley, was 2nd. A special award was made for a similar group from Mr. R. C. PULLING, Wood Green.

Honorary groups were numerous, one of the finest coming from Mr. GODFREY, of Exmouth, who had a striking centre of plants finely flowered of the golden *Ettie Mitchell*, supported on either side by many large flowers, and bunches of smaller ones.

MESSRS. DOBBIE & SONS, Rothesay, sent a good collection of early-flowering Chrysanthemums in bunches, with some excellent striped French Marigolds. Mr. ERIC SUCH had a good collection in bunches of outdoor Chrysanthemums. Mr. H. J. JONES, of Lewisham, set up a most effective group of foliage and flowering plants, including fine Bamboos, Palms, Crotons, and other foliage, with capital Chrysanthemums, *Gloire de Lorraine* Begonias, &c. He also had on a table, a good collection of Chrysanthemums in bunches. Messrs. H. CANNELL & SONS, Swanley, put up a good group of Cannas. Mr. T. S. WARE, of Feltham, had fine single and double Begonia flowers. Mr. G. MORTIMER, a good collection of show and Cactus Dahlias. Messrs. A. W. YOUNG, of Stevenage, a big bank of cut hardy flowers. Messrs. J. LAING & SONS, Forest Hill, Sydenham, pretty Begonias and Streptocarpuses; and also a very fine collection of Apples and Pears, most artistically decorated with sprigs of berries. Messrs. S. SPOONER & SONS, Hounslow, also had a big collection of Apples and Pears, presenting a most attractive feature.

NEW VARIETY.

The Floral Committee awarded a certificate to the sport Mrs. James Williams, described on page 281, col. 1.

MESSRS. DEVERILL & SONS' VEGETABLE COMPETITION.

With collections of vegetables, Mr. E. BECKETT, Aldenham House Gardens, Elstree, was a good 1st, having superb autumn Giant Cauliflowers, Ailsa Craig Onions, Oxonian Leeks, good

Beets, Celery, Tomatos, Carrots, and Potatos. Mr. W. POPE, gr. to Lord CARNARVON, Highclere Castle, was 2nd; and Mr. WILKINS, Henbridge, 3rd. Mr. J. BOWERMAN, Hackwood Park, had the best twelve Ailsa Craig Onions in perfect bright bulbs; Mr. BECKETT coming 2nd; and with six bulbs of the same variety, Mr. H. FOLKES, Hemel Hempstead, was 1st. He also had the best six of Aristocrat, these closely resembling flatish Ailsa Craig; also the best six of New Tankard, like Excelsior, but Mr. POPE was the only exhibitor of the true variety. Mr. BECKETT had the best six Leeks, also of Celery, and twelve Parsnips. Mr. JAMES HALL, of Wells, Somerset, had the best, and very handsome intermediate Carrots; and Mr. M. SAGE, the best Beet, Middleton Park. Quality generally was good.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

ANNUAL DINNER.

OCTOBER 10.—The fourteenth Anniversary Dinner of this excellent institution took place at the Holborn Restaurant on Wednesday evening last, when Mr. Geo. Monro, V.M.H., presided over a very satisfactory attendance of members and friends. The Chairman was supported by the following gentlemen and others: Messrs. J. Monro, G. W. Roach, H. J. Veitch, W. Roupell, Peter Kay, W. Y. Baker (Thames Bank Iron Company), J. Hudson, C. J. Ingram, Arnold Moss, B. Wynne, and J. George. After the toast of "The Queen" had been drunk with enthusiasm, the Chairman proposed the toast of the evening, "Continued prosperity to the United Horticultural Benefit and Provident Society." His speech plainly set forth the unique advantages that this Society offers to young gardeners willing to become members.

The Society, Mr. Monro said, was started in the year 1865, and for a long time its founders had very hard work, and there was not at the time much return for this. About 1885 Mr. John Wright, V.M.H., helped the Institution greatly by making its objects better known to the gardeners of the country. Since those rather difficult days the membership had increased from one hundred to eight hundred persons. Sixty-five new members had joined the Society since Mr. Baker presided over the anniversary dinner in 1899.

Mr. MONRO then proceeded to analyse the benefits the Society offers to its members by means of its various "funds." A member who pays 9d. per week, if he should be ill, is entitled to receive 18s. per week for six months, and half of that sum for a further period of twenty-six weeks. If his illness continue longer than that period, the member is transferred to the Benevolent Fund. Members unable to pay the subscription named above, may secure 12s. per week during the first six months of an illness, and half of that amount for a similar period, by paying a subscription proportionately less. The Management Fund only costs the members 2s. 6d. a year, and is administered with unusual economy. The Benevolent Fund received 8s. from members of the first grade, and 2s. 6d. from others; but is greatly augmented by voluntary donations from friends of the Institution. The Convalescent Fund is quite a voluntary one, and through its funds the Society is able to look after its sick members during their convalescence. The Society, said the Chairman, has an excellent reserve fund, but he was not disposed to look upon it as excessive. The Institution was possessed of the advantages of a benefit society, savings bank, and insurance corporation. Members who attain the age of seventy years are entitled to draw from the Society the amount then standing to their account. One of the present members who joined the Society at its commencement has a sum of £99 1s. 9d. upon the books.

Mr. J. HUDSON (Treasurer), who responded to this toast, said he longed to see the membership increased to 1,000, and then he might be content to retire from his office, but in the meantime—No. "The Honorary and Life Members" was proposed by Mr. C. H. CURTIS, who urged such members to use all their influence to increase the Society's membership. Mr. ARNOLD MOSS, who replied in a humorous speech, said that he was afraid he had noticed during his experience, a decline in the independence of the individual in some grades of society. He thought the influence of a benefit society had the effect of encouraging this desirable quality in its members.

Other toasts included "The Craft," proposed by Mr. H. J. VEITCH, and seconded by Mr. A. DEAN; and "The Chairman," proposed by Mr. PETER E. KAY.

The donations in connection with the dinner included the following:—Mr. H. J. VEITCH, £5 5s.; Mr. Geo. Monro (Benevolent Fund), £5 5s.; Mr. N. N. Sherwood (Convalescent Fund), £5 5s.; and Mr. F. N. COX, £1 1s. &c. Honorary Membership subscriptions were received from Messrs. WILLINGHAM BROS., and Messrs. W. CUTBUSH & SONS. The tables were prettily decorated with plants and flowers generously sent by friends of the Institution.

Gardeners who wish to become members of this Society, should communicate with the esteemed Secretary, Mr. W. COLLINS, 9, Martindale Road, Balham, London, S.W.

MISCELLANEOUS SOCIETIES.

Isle of Wight.—The Isle of Wight Horticultural Improvement Association held its seventh annual exhibition of fruit and honey on the 4th inst. in the Medina Hall, Newport. There were over 400 dishes of Isle of Wight fruit, grown on all kinds of soil and representing all parts of the Island. The standard of excellence was not so high as last year, but there was a greater variety of open-air fruit. For the largest and best collection of open-air fruit in distinct varieties the chief trophy (a Silver-gilt Medal) was won in a keen competition

by Mr. W. Taylor, gr. to Admiral DENISON, Woodside, Wootton, with a collection of ninety dishes. For twenty-four dishes of fruit in eighteen varieties the Cheal Silver Medal was won by Mr. John Heygate, gr. to S. P. MEMPHRE, Esq., Cowes. For twelve dishes of fruit in nine varieties, open to amateurs only, the Cheal Silver Medal was won by Mr. GEORGE WILLIAMS. For the best dish of fruit in the show, the Toogood Silver Medal was won by County Alderman T. GIBBS, with a finished dish of Emperor Alexander Apple. Amongst the non-competitive exhibits were four bunches of Grapes grown and staged by Mr. T. BROWN; Pears by Mr. W. MATTHEWS; Apples by Mr. I. W. PHILMAN; and an exhibit of honey by the Rev. R. L. MOORE. A miscellaneous assortment of plants lent beauty and effect to the tables and platform. These were kindly loaned by Mr. R. R. PITHS (gr. W. E. WICKENS) and Mr. H. Webber. Messrs. CHEAL, of Crawley, received the Association Certificate for a magnificent collection of fruit.

Croydon Horticultural Improvement.—A meeting was held at the Sunflower Temperance Hotel, Croydon, on Tuesday, the 2nd inst. There were more than forty members present. Mr. Scaplehorn, a member of the Woking Horticultural Society, gave a paper on "Hardy Flowers," calling attention to the grand display of hardy flowers made in the garden from early spring to the advent of winter. A fine display of hardy flowers was exhibited by the members. Mr. M. E. MILLS, of Coombe House Gardens, showed twenty-four fine bunches of Phlox Mr. Gladstone, and a vase of Physalis Franchetti. Messrs. G. JACKMAN & SON, Woking, sent two dozen bunches of hardy flowers, including Stokesia cyanea, Michaelmas Daisies, &c. Mr. J. R. BOX brought a number of single and double Begonias, cut from the open ground at West Wickham Nurseries. Messrs. JOHN PEIR & SON, The Nurseries, Tulse Hill, exhibited a collection of Begonias.

Wargrave Gardeners'.—The members of this Society met on the 3rd inst. to hear a lecture by Mr. F. W. E. Shrivell, F.L.S., of Thompson's Farm, Golden Green, Tonbridge, on "Chemical Manures." The lecturer has carried out experiments for the past six years in conjunction with Dr. Bernard Dyer, and the results of these experiments formed the subject of his lecture. It was shown that the three chief constituents of ordinary dung, viz., nitrogen, phosphoric acid, and potash, could be supplied to the soil by means of chemicals. Messrs. Pope and Finch were awarded Cultural Certificates for exhibits of Dracenas and vegetables respectively.

Reading and District Gardeners'.—The first meeting of the autumn session was held on the 5th inst., when Mr. G. Stanton, of Park Place, Henley-on-Thames, gave a paper on "Annals." Mr. Stanton said that at the present day it was difficult to draw the line exactly between annuals, biennials, and perennials, because the two latter are frequently treated as annuals with advantage by growing them from seed. Annuals may be said to serve three distinct purposes, viz., for cutting, an important consideration in these days; for bedding, a purpose for which many of them are well adapted; and for filling up or supplementing our mixed borders as may be necessary. The varieties best adapted for various purposes were then touched upon under the following headings:—Climbers, Summer Bedding, Spring Bedding, Cutting, and Mixed Borders. A very interesting discussion followed, in which Messrs. Fry, Townsend (Wellington College), Barnes (Bearwood), Tunbridge (Henley), Pope (Wargrave), Butcher (Newbury), Neve (Sindlesham), Tufnail, Sherlock (Mortimer), Lever, Alexander, and Bryant (Pangbourne), took part, and the conclusions were that autumn-sowing was of great advantage, and that many perennials should be treated as annuals. A feature of the meeting was the exceptionally good exhibits of flowers from the open, which would have been considered excellent had it been August instead of October. The flowers were staged by Mr. Stanton, who had a collection of thirty-four varieties: Mr. F. Lever, The Gardens, Hillside, perennial Asters from seed; Mr. W. Townsend, Sandhurst Lodge Gardens, Pentstemon and Physalis Franchetti; Mr. E. Fry, The Gardens, Greenlands, Sweet Peas; Messrs. Sutton & Sons, Ten-week Stocks, Nemesis, Marguerite-Carnations, and Mexican Poppies; Mr. S. W. Sherlock, Oakfield Gardens, Salvias; whilst Mr. Botley, Blythwood Gardens, Maidenhead, brought some beautiful plants of Eucharis grandiflora. Although the Association is a very large one, it is continually growing; seven new members were elected at this meeting.

THE ROYAL HORTICULTURAL SOCIETY.

I AM writing from Suva, Fiji, and the date is July 7, 1900, hence my English readers will excuse the belated nature of my remarks. A few remarks on Mr. Arthur Sutton's letter in your issue of May 7, 1900, p. 276, may not be out of place. The Chiswick trials are not experiments, but tests as to the value of a new or supposed new variety of any vegetable, flower, or fruit; and carried on for the protection of the consumer, and not for the benefit of the trader, or the raiser of new varieties, or the introducer of a new species. A seedsman's trials are quite other things, and aim with quite other objects. The Chiswick tests are unselfish; the seedsman's trials are purely selfish. Still, a very necessary thing in connection with a well conducted

seed business is a trial ground. On the results of the tests rests his confidence that his clients are being well served. Also in testing the comparative value of the varieties in any group, and thus offering the best, for after all a name is not of so much value as a good "stock." The good old system has gone of selling seeds under the name by which they were originally introduced, and thus a seedsman now-a-days must find out what his competitors are offering under their own names. From the foregoing remarks it will be seen that that which applies to a seedsman's experimental ground, has no bearing on the work Chiswick is supposed to do, and I have no doubt does, and has done well for the last thirty years, and if as honest work is done in the future as has been done in the past, the Royal Horticultural Society has a long life. It should never be forgotten that the reputed good work done at Chiswick, greatly helped the Royal Horticultural Society to survive the troublous times it passed through towards the end of its stay at South Kensington.

The quotations from Mr. Sutton's trial-book for 1899 cannot be considered as applying to Chiswick in any sense of the word. The varieties of various species could be checked, and their relative value estimated by clean stocks of say about twenty-five leading standard varieties in each case.

It will be seen from the above estimates that Chiswick need not have so very many names (another word for varieties) as standards to check off and estimate the value of all the new Peas, Potatoes, Tomatoes, Lettuces, Cauliflowers, Onions, Cabbages, Broccolis, Dwarf and Runner Beans, Broad Beans, and Sweet Peas, set forth in Mr. Arthur W. Sutton's list as representing his own experimental grounds.

The Fruit Committee in the past has shown itself quite capable of dealing with all kinds of new vegetables, &c., and I have no fear that in the future its record will stand good. I do not think it at all necessary that the members of the Fruit Committee should go very often to Chiswick or visit the experimental grounds of seedsman to qualify for the discharge of their duties. The Superintendent at Chiswick must be fully up to his work and master of the situation, keeping a record especially of Peas up to the date when he should call the committee together; when there, it should be his duty to bring all points before the committee and record its decisions.

There has not arisen a necessity during the last thirty years to call the attention of the Council of the Royal Horticultural Society to the defective working of the Chiswick trials; and I hope the future will show as good and as clean a bill.

The new grounds should be as near to London as possible, not forgetting the sacrifice the members of the committee have to make in time and money in order to do their voluntary work for the Society. Again, how few Fellows will go any great distance unless on some special occasion! The wiser commemoration of the Royal Horticultural Society's Jubilee most certainly would be a Hall of Horticulture for holding shows and meetings of committees. I have been amazed at the backwardness of rich men in not erecting such a Hall to carry their name down to posterity. I approached two of my rich friends on the subject but without success. One has joined the majority and missed a chance, the other lives and adds to his pile, but may yet do the handsome thing. *Peter Barr, V.M.H., Fiji, July 7, 1900.*

BOOK NOTICE.

FACTS FOR FRUIT FARMERS.

THIS is a small pamphlet by Mr. Sampson Morgan, a persistent advocate of free trade in this country, more especially as it touches upon horticultural and agricultural productions. In this brochure, the writer points to the evils resulting from the absurd and antiquated land laws of this country, and makes allusion to the totally inadequate character of the Agricultural Holdings

Act just passed, which, as he says, "leaves things in a most unsatisfactory position." We can only regard much of recent legislation on the question of land tenure and agricultural improvement as a "beautiful illusion." As Mr. Morgan points out, the only industry connected with the land which can show any great improvement, and that, too, in spite of, or rather because of free trade in fruit, is fruit-growing—that is, hardy fruit. In Grape and Tomato-culture we are more than holding our own, and in time will be able to do without much of the foreign and inferior produce coming from abroad. We heartily commend this pithy little pamphlet on some of the crying evils existing in our country to the notice of our readers at the present juncture.

TREES AND SHRUBS.

FLOWERING SPECIES IN THE SOUTH-WEST.

ARUTILON vexillarium still continues to flower profusely, and the noble, deeply-cut foliage of Aralia spinosa, crowned by plumes of ivory-white inflorescence, has formed an attractive feature. It is when confined to a single straight stem that this Aralia is seen to the best advantage, as it then assumes a Palm-like character. Cassia corymbosa, trained against southern walls, has been a sheet of golden blossom, a portion of which is often retained well into the winter. Catalpa bignonioides has also bloomed well; and Caryopteris Mastacanthus has been covered with its pale blue flower-heads—a bush 3 feet in height and as much in diameter is a pretty sight when in full flower. Large specimens of Clerodendron trichotomum, 10 ft. to 15 ft. in height, have blossomed profusely, but this is a subject that often remains flowerless until it has attained a considerable size. C. Bungei has also been in bloom, and Desfontainia spinosa held its scarlet and yellow tubular blossoms through the greater portion of August. Escallonia montevidensis was at its best in the early days of September, when its white, scented flower-heads were the resort of countless butterflies. The Habrothamnus is still in blossom in the open; and in August Hibiscus syriacus totus albus was white with flower. A large standard Magnolia grandiflora has flowered continuously since mid-June, and is still bearing its large, ivory-white chalice in scarcely diminished numbers. Pavia macrostachya is a valuable autumn-flowering shrub, producing its white flower-spikes at a time when the majority of flowering shrubs are out of bloom; a remark that also applies to Solanum crispum, whose mauve, yellow-centred flowers borne in quantity on bushy specimens, are pleasing in their soft colouring. Bamboos, Pampas - grass, and Yuccas, the latter flowering with unparalleled prodigality, have added nobility of form to many a garden picture; while early in October, Miscanthus (Eulalia) japonicus and its varieties commence to throw up their tall flower-shafts. Growing on a sheltered South Devon lawn there is a fine clump of M. zebrinus, 18 yards in circumference, which is an object of great beauty when in full flower. *S. W. F.*

MARRIAGE OF MR. N. N. SHERWOOD'S DAUGHTER.—On October 9, at Christ Church, Streatham Hill, S.W., by Rev. C. S. NICHOLL, Vicar, assisted by Rev. HUBERT CURTIS, M.A., Dr. J. WILLIAM CAMPBELL, of Mentone, was married to MAX, only daughter of N. N. SHERWOOD, Esq., of Dunedin, Streatham Hill, S.W.

THE ROYAL HORTICULTURAL SOCIETY.—The Secretary (Rev. W. Wilks, M.A.) has supplied us with the following information:—

Mr. Gauntlett of Redruth has presented a collection of thirty-four hardy varieties of Bamboos to the Society.

The Essex County Council have presented one of their Technical Committee students to a scholarship tenable at the Society's gardens.

The following are the subjects appointed for trial at the Chiswick Gardens during the season 1901-2, viz.:—1. Verbenas; 2. Hybrid Tea and Hybrid China Roses; 3. Delphiniums; 4. Herbaceous Lobelias; 5. German Irises, with a view to the correction of nomenclature; 6. New varieties or Potatoes; 7. New varieties of Peas; 8. Summer and Autumn Cabbages; 9. Plants suitable for Salads.

TRADE NOTICE.

MR. JOHN R. BOX, of Derby Road, and Station Road, Croydon, informs us that he now conducts his chief office-work at The Nurseries, West Wickham, Kent, where all communications in future should be addressed.

ANSWERS TO CORRESPONDENTS.

APHIS: *H. C.* Syringe with tobacco-water and soft-soap, or a mixture of nicotine and water.

ASTERS: *Troubled.* It is impossible from the specimens sent for us to say what has caused the death of the Asters.

APPLES CANKERED: *J. A.* All the specimens show the fungus (*Nectria*), the spores of which find entry through cracks in the bark caused by frost or other cause. The excessive dampness of the climate is indicated by the green growth on the branches.

AUBERGINES: *H. H. H., America.* Seeds of this vegetable may be obtained from any well-known nursery firms in these Isles. Have you attempted to procure them in America?

BOOKS: *T. W. P.* The subject is thoroughly well discussed in Mr. William Paul's *Observations on the Cultivation of Roses in Pots*, ed. viii., published by Messrs. Simpkin, Marshall, Hamilton, Kent & Co., 23, Paternoster Row, London; price about 1s. A larger work upon the cultivation of the Rose, in which is contained a chapter on Roses under glass, is *The Book of the Rose*, by Rev. A. Foster-Melliar, M.A., and published by Macmillan & Co., London and New York.—*J. E. H.* *Greenhouse and Stove Plants*, by Thomas Baines, published by Jno. Murray, Albemarle Street, London; or, if you need a fuller work, you should obtain Nicholson's *Dictionary of Gardening*, published by L. Upcott Gill, 170, Strand; a Supplement to this latter work has just been published, and you may find a reference to it on p. 276.—*J. C. & Co.* We know of no book that specially treats of the drying, preserving, and canning of fruits.—*G. C.*, *Addlestone.* *The Horticultural Directory and Year Book*, published at 12, Mitre Court Chambers, Fleet Street, London, price 1s. The new edition of *Thompson's Gardener's Assistant* may be obtained from The Gresham Publishing Company, and the information you require will be found in this work, or in *Nicholson's Dictionary of Gardening*.—*W. C.* *A Practical Introduction to the Study of Botany*, by Prof. Farmer, and published by Messrs. Longmans, Green & Co., 39, Paternoster Row, London.

CELERY SPOTTED: *R. J.* If the irregular brownish blotches on the leaves sent are closely examined, they will be found to be studded with minute black dots; these are tiny cups, from which are given out long, slender spores of the fungus, *Septoria petroselinii* var. *apii*. This disease is known in the United States as the late blight of Celery, because it is most destructive in late summer or early autumn. We do not often hear of this blight in this country, although it is abundant enough in the present case. Experiments with remedies are in progress, and up till now the best solution for spraying purposes is carbonate of copper, 6 oz.; strong liquor ammonia, 2 pints; water, 45 gallons. This is a good check for the present season; but the best prevention consists in using young plants free from leaf-spots of any kind.

CHRYSANTHEMUM RUST: *W. R. and J. F.* The well-known fungus, *Puccinia Hieracii*. Burn the affected plants; spray the other plants with a solution of liver-of-sulphur $\frac{1}{2}$ oz. to a gallon of water, or with weak Bordeaux Mixture.

CROTONS DISEASED: *Croton.* The brown spots on the leaves are probably produced by a minute fungus, which was found on every spot examined. As to remedy, we know of no experimental information. Spraying the foliage with potassium sulphide might be tried, but any solution used would require to be tested previously on a few leaves to see if it did no damage; the solution would vary from $\frac{1}{4}$ to $\frac{1}{2}$ oz. of sulphide in each gallon of water. The fungus appears to

be one which is favoured by excessive moisture on the leaves and defective ventilation. Some change in details of cultivation should be tried.

FINLAY LAWN-RAKE: *W. T. C. and A. N.* We have no knowledge if this implement can be procured in England. You would do well to communicate with a large firm of dealers in horticultural and agricultural implements, who would most likely be able to obtain it for you from America. Makers should advertise their goods.

FRUIT-TREE WASH IN WINTER: *Enquirer.* The proper time to cleanse fruit-trees in the garden or orchard is so soon as the trees have been given their winter pruning in early winter. A good liquid for syringing the trees at such times is the following:—Dissolve $1\frac{1}{2}$ lb. of caustic soda in 10 gallons of hot rain-water, and use at a temperature of 120°. The old remedy of very hot water, paraffin, and soft-soap is equally effective, but it requires to be kept constantly stirred by one person whilst another applies the liquid to the trees. A quarter of a pint of paraffin may be used to 2 gallons of water, and plenty of soft-soap. If there is any green moss upon the trees, it may be removed by the use of a scrubbing-brush and hot soapy water. If you syringe the trees twice during the winter, the second operation should take place in February, or early in March.

GLADIOLUS—R. S.—is masculine, hence the spelling should be *G. nanus delicatissimus*, but if you insert var. or varietas, then the final adjective must be feminine to agree with varietas. Medium is an old generic name; hence *Campanula Medium* is correct in spite of appearances. Do not forget to use a capital M.

GRAPES: *E. D.* There appears to be no fungus upon the berries, and it is most likely the atmosphere of your viney is too moist for the ripe berries to keep well. Ventilate the house freely in bright weather, and cover the inside border with a good mulch of dry, clean straw.

GREEN POND. The growth is probably of confervoid nature. It was rotten when we received it. Cover the pond over for a short time, so that the light does not gain access to it. This will kill the weed, but the process may have to be repeated if any spores remain.

HORSE ON LAWN: *Enquirer.* If a bucket of water be thrown upon the spot immediately afterwards, good, rather than injury, will result from occurrences you describe.

Kew Guild Journal: *W. G.* We do not think the edition of this *Journal* for the present year has yet been issued, nor can we advise you when it may be expected. You will doubtless be sent a copy when it is ready for distribution.

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can consistently with our editorial work, but as the naming entails much labour and considerable cost we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is often unavoidable.—

J. B., Guildford. 1, Jalousie; 2, Durondeau; 3, Cellini; 4, Dunelow's Seedling; 5, Cox's Orange Pippin; 6, Wyken Pippin.—*R. S., Hants.* 1, Calabasse Bosc; 2, Fondante Van Mons; 3, Dunmore; 4, Beurré Duval; 5, Bergamotte Dussart; 6, Doyenné Downing.—*J. M.* 1, Hollandbury; 2, Hawthornden; 3, Scarlet Nonpareil; 4, Paradis d'Automne.—*T. F.* 1 and 2 were rotten and smashed; 3, Brown Beurré; 4, Huyshe's Prince of Wales; 5, Sucriée Verte; 6, De Maraise.—*A. R. S., Sussex.* If you can send a good specimen we will do our best to help you, but it is very unsatisfactory to attempt naming deformed or disfigured samples.—*J. H.* 1, smashed and unrecognisable through being sent in an over-ripe state; 2, Baronne de Mello; 3, Doyenné d'Alençon; 4, Bergamotte d'Esperen; 5, Huyshe's Victoria.—*W. J. W.* We think your Apple must be a local variety, as we fail to identify it with any in general cultivation. It has some resemblance to Beauty of Kent growing in a cold situation.—*E. F. G.* 1, Margil; 2, Lord Grosvenor; 3, Winter Greening; 4, not known.—*H. A.* 1, Frederic de Wurtemberg, also known as Médaille d'Or; 2, Beurré Superfin; 3, Capucin Van Mons;

4, Autumn Colmar; 5, appears to be a small Catillac; 6, send a fruit later on; it is too immature at present.—*W. H. H.* The fruits do not appear to be in characteristic condition, but the Pear is certainly not Jargonelle; it more nearly resembles Chaumontel. The Apple is probably Cockle's Pippin.—*A. L.* We do not quite understand your letter. Please send foliage of the trees and describe their habit. We shall be glad to help you if possible, but cannot reply by post.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*W. C.* 1, *Pittosporum tenuifolium*; 2, *Teucrium fruticans*; 3, *Rhus Cotinus*; 4, *Leucophyllum Brownii*.—*Passiflora.* *Passiflora edulis*.—*U. T.* We cannot undertake to name Roses. The Orchid is *Odontoglossum crispum*.—*H. R. H.* *Centaurea ragusina*.—*J. L.* *Nicotiana rustica*.—*A. G.* 1, *Salix alba*; 2, *S. viminalis*; 3 and 4, *S. fragilis*; 5, *S. pentandra*.—*Enquirer.* 1, *Laelia Perrini*; 2, *Odontoglossum odoratum*; 3, probably an *Artemisia*.—*T. F.* 1, *Philodendron variegatum*; 2, *Begonia subpeltata*; 3, *Adiantum fragrantissimum*; 4, *Selaginella viticulosa*; 5, *Adiantum cuneatum elegans*; 6, *Adiantum macrophyllum*.—*A. S. B.* *Onoclea sensibilis*, a North American Fern, but perfectly hardy here.—*G. H. A.* Two forms of *Hæmanthus Katherineæ*, Baker, *Bot. Mag.* t. 6778.—*J. G. B.* We cannot name varieties of *Calceolarias*.

OAKS: *A. McK.* Without knowing the local conditions we are unable to assign a cause for the shrivelling of the leaves on a particular tree. The leaves look as if they had been sunburnt when wet with dew or rain.—*W. K.* All forms of *Q. pedunculata*. If you sow acorns from the same tree, you will get many forms which obviously cannot be ranked as species.

PANDANUS VEITCHI: *A. G.* This in common with other species of the Screw Pine requires a stove temperature, and therefore the night temperature afforded during winter should be 60°, and in summer 70°, rising 10° or even more during the day from sun-heat. Use a loamy, rather than a peaty compost, and provide each pot with efficient drainage, as *Pandanus* requires considerable quantities of water, and it is essential the water should filter quickly through the soil. Good colour is encouraged by affording the plants some shade, in the absence of which the white portions of the leaves become pale green or faint yellow colour. The plants should now be given less exciting treatment than they will need in spring, and with the decreased temperature less water should be afforded, and the atmosphere may be kept less moist.

PRUNING ORCHIDS: *A. M., St. Mary's.* You must be very careful about following the instructions given by your friends, who advise you to cut off Orchid bulbs after they have done flowering. Pruning in a reasonable manner is beneficial, but to begin with, you had better confine your practice to the cutting away of damaged portions, or any of the small pseudo-bulbs which you know to be useless. In most collections useless bulbs are left far too long on the plants. They have to be supported by the forward and actively rooting part of the plant, the leading flowering growth suffering in consequence. In the case of *Dendrobiums*, such as *D. nobile*, you can cut the portions removed into lengths and place them like cuttings in an Orchid-pan, and young plants will result.

UNFRUITFUL WALNUT-TREES: *C. F.* You might obtain good results from checking the growth of the tree by pruning its roots. Take out a trench 3 feet deep upon one side of the tree, and fork away the soil, working towards the stem. Remove or cut back any thick roots that are found, and preserve the fibrous ones. Walnut-trees have a reputation for being uncertain fruiters.

COMMUNICATIONS RECEIVED.—Prof. Kriazin, Berlin.—S.W.F.—*Mis. A.*, Workshop (we will enquire).—F. W. B.—D. R. W.—W. H. Y.—N. N. C.—J. H.—Gardener.—C. P.—D. T. F.—E. S.—W. W.—H. T. M.—R. G., Australia.—L. B.—R. P. B.—H. W. W.—J. H. & Son.—De B. Crawshaw.—W. C.—H. M. (too late).—G. G.—J. Carter & Co.—R. Dark, and many other correspondents who have sent us parcels of fruit, which we will endeavour to name in due course.

(For Markets and Weather, see p. xvi.)



VIEW IN THE GROUNDS AT THE HENDRE, MONMOUTH, THE SEAT OF LORD LLANGATTOCK.

THE

Gardeners' Chronicle

No. 721.—SATURDAY, OCT. 20, 1900.

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PROGRESS OF PLANT BREEDING IN THE UNITED STATES.

MR. H. J. WEBBER and Mr. E. A. Bessey have reprinted their paper on this subject from *The Year-Book of Department of Agriculture* for 1899. Readers of the *Journal of the Royal Horticultural Society* will remember Mr. Webber's interesting report read at the Hybrid Conference last year, wherein he dealt with the crossing of Oranges, Pine-apples, Cotton, and briefly with Corn, i.e., Maize. In the present one, the authors discuss the improvements made in Pears, Apples, Plums, Raspberries, Blackberries, Strawberries, Gooseberries, vegetables, and cereals, Nuts, Cotton, and flowers.

In the introduction they give an interesting history, showing that at the beginning of the century only imported plants were grown; but as growers acquired a knowledge of improving plants by breeding, they have succeeded in raising greatly improved sorts of native American origin. In all cases the proportion of the latter soon became much greater than of imported plants. Even in 1817, sixty per cent. of Apples were of American origin, none being grown in 1800. In 1895, ninety per cent. were of American production. The same applies to all sorts of fruits. A striking instance of 100 years' improvement is seen in the Tomato. It was first brought from San Domingo to Philadelphia in 1798 as an ornamental plant. It was not till 1812 that the fruit was eaten.

The earliest attempts at fruit growing with European sorts in America were comparative failures, and the history of American horticulture begins in 1806, sixty-six per cent. of fifty-nine varieties being natives at that date. The general want of adaptability of European fruits to the American climate, is seen in the fact that of 150 varieties imported into Boston in 1805, the only desirable kinds raised were two Cherries and one Pear.

Plants are introduced from Europe still, but the object is now changed. They are only means to an end, as, e.g., Russian Apples are imported for hybridising purposes, to impart a cold-resisting quality.

Previously to this century—as, of course, was also the case in England—early settlers, and indeed the natives, selected the best from innumerable seedlings, and exchanged seed with other districts to find out which best suited various localities respectively. In 1822, Mr. Thatcher wrote that "Seeds for planting should always be selected from the most highly-coloured fruit, and from the fairest and ripest specimens of such variety;" and from 1800 to 1850 this was almost the sole method of breeding, for hybridisation was but little attended to in the first half of the century. In 1836, however, Mr. A. J. Downing wrote:—"We would suggest that a great saving of time, and a considerable improvement in quality and vigour, might be gained by calling in cross-fertilisation to the aid of the cultivator as soon as the fruit of the trees (say of the second generation) begins to show symptoms of amelioration." Lastly, in 1860, Mr. M. P. Wilder combines both methods, as follows:—"It was my first, so it shall be my continual and last advice: plant the most mature and perfect seed of the most hardy, vigorous and valuable varieties; and, as a shorter process, ensuring more certain and happy results, cross or hybridise your best fruits."

The first record of the production of a hybrid variety in America was by W. Prince, who raised the Prince's St. Germain Pear from seed of the old St. Germain, impregnated by the White Doyenné, about 1806.

GRAPES.

European sorts proved to be insufficiently hardy in eastern America, and succumbed to the phylloxera, &c. This brought the native species into cultivation; the first was "Catawba," wild in North Carolina; then "Isabella," a second wild Vine, was cultivated. Subsequently many other wild forms followed suit.

From an accidental seedling, Mr. Bull raised the popular "Concord," which in subsequent years provided 22,000 seedlings for selection. Only 1 per 1,000, however, was worth keeping, and none equal to "Concord." Though many new varieties have been produced during the last twenty years, the good ones are mainly hybrids. Indeed, the Grape owes more to hybridisation than any other fruit.

In a Grape grower's manual of 554 varieties, 287 are hybrids, 141 select seedlings, 57 chance seedlings, 68 of unknown origin, and 1 a sport.

PEARS.

Governor Edwards, of Connecticut, was the earliest, and Mr. Dana, of Massachusetts, was the most successful in the practice of careful selection, about the year 1860, always planting seeds of the best variety.

The Pear owes little to artificially-produced hybrids, the most widely-grown commercial Pears being natural hybrids between the European Pear and the Chinese Sand Pear.

It is probably, to the father, the European, that is due the improved quality of the fruit; while the vigour and adaptability to growth in warm climates evidently comes from the Sand Pear.

APPLES.

The famous Newtown Pippin was a chance seedling discovered about 200 years ago; so also was the Baldwin Apple, found in 1742, in Eastern Massachusetts, and brought into notice by Col. Baldwin. Difficulties of climate hindered fruit culture in the west, but Mr. P. M. Gideon, of Minnesota, in 1855, began a course of experiments by planting thirty varieties of Apples (as well as other fruit), and a bushel of Apple-seeds. For nine years he planted thousands, and at the end of ten years, one small seedling Crab was left! From the seed of this one seedling, which proved hardy, and was named the "Wealthy," the Apple culture of the North Mississippi river region has been established.

Hybridising with Russian Apples is now being practised experimentally to secure hardness.

PLUMS.

European sorts alone were at first grown. In 1840, Mr. H. Corse raised four in Canada from wild species, and about 1850, such became recognised. All the best varieties are the result of chance seedlings. Since 1870, hybridising with the Japanese Plum has been practised. This is now one of the parents of twenty-seven hybrids found valuable and named.

RASPBERRIES.

Those cultivated are almost entirely natives, and chance seedlings from them. Selections from European plants proved mostly unsuccessful, though one, Brincklé's Orange, raised in 1844, was from an English variety. In the last twenty-five years valuable hybrids have been propagated.

BLACKBERRIES.

These are entirely of American origin. In 1850 the first variety was named. "The Lawton" and "Wilson's Early" were wild plants introduced into gardens from the roadsides, &c. Some hybrids have been raised, but none are as yet much known.

Blackberry hybrids have been raised, one of which, "Primus" (the western Dewberry x Siberian Raspberry), ripens its fruit several weeks before either of the parents, and excels them much in productiveness and size of fruit.

STRAWBERRIES.

At first no varieties suiting the climatic conditions existed. Keen's Seedling, raised in England, failed in the States. Mr. Hovey experimented to find a sort adaptable in 1833. He made six series of crosses between seven distinct varieties, after removing the stamens. One seedling out of very many surpassed the best of the parents. It was kept under observation for six years, and then put on the market as "Hovey's Seedling." It gave the impulse wanted to Strawberry-culture; it was the leading berry for thirty years, but has long since been superseded. Among recent hybrids is the Hunn, being the only one out of about 1,700 hybrid seedlings tested worth preserving.

GOOSEBERRIES.

The first grown were of foreign origin, but suffered from mildew; in 1845 native species were cultivated. Since then a number of seedling varieties of good quality have been produced.

TOMATOS.

In the early part of the century the races had small and lobed fruits. In fifty years the fruit has become large and smooth. As with the Strawberry, the first great advance was made by hybridisation. The "Trophy" was the result of crossing in 1850 the small, smooth "Love-Apple" with the Tomato of that time. The solid mass of the latter, together with the smooth skin of the former, combined to form the modern types of the fruit. Selection and hybridisation have since improved upon the Trophy greatly.

POTATO.

Improvements by selecting the tubers was made even in the eighteenth century. Seedlings were also raised in 1841 and 1855 and onwards. In 1850 new wild strains were introduced from South America. Out of 16,000 seedlings Mr. Goodrich obtained ten worthy of cultivation. In 1860 a fresh race was produced from seedlings of the garden Chili from South America. One, "Early Rose," commanded almost fabulous prices, became the leading variety in America, and still retains the position in many places. In other cases hybridisation has been employed, but no results as yet equal the above.

PEA.

Cross-breeding has greatly improved this plant, the most marked result being the dwarf PEA, American Wonder, the offspring of McLean's Little Gem and the Champion of England.

SWEET PEA.

An interesting example of the result of continuous selection is seen in the "Blanche Ferry," produced after twenty-five years from the old "Painted Lady," in northern New York. From this have arisen at least two dwarf varieties, known as "Cupids," as seedling sports.

The rest of the plants referred to are not cultivated here or in gardens, so we need not reproduce them; but the preceding show how great has been in America the advantage of hybridising over the old method of selecting from seedlings alone without artificial crossing.

NEW OR NOTEWORTHY PLANTS.

BEGONIA AUGUSTINEL.*

THIS is one of the numerous novelties discovered and sent to Kew by Dr. A. Henry, who has resided for many years in Central and Western China. Indeed, we in England are almost entirely indebted to Dr. Henry for what we know of the botany of the region named. It is no exaggeration to say that he has sent dried specimens of some 600 or 700 new species to Kew, and of at least twenty-five new genera. Unfortunately, Dr. Henry has been so situated that it was difficult for him to

collect and send home seeds of living plants. Still, he has sent some seeds, and amongst them those of the present plant, whilst seeds of a considerable number have been taken from his dried specimens. Mr. Wilson, too, has been collecting for Messrs. James Veitch & Sons, and has succeeded in introducing a number of valuable and interesting plants, so we may expect to see some of them in general cultivation shortly. The Begonia under consideration, although very pretty, is not so ornamental as some of its nearest relatives, namely, *B. xanthina* and *B. Rex*, but it may yet prove a useful addition to the greenhouse contingent. In habit and general appearance it most closely resembles *B. xanthina*, from which it differs in having rugose, rough, hairy leaves, and rose-pink flowers. *W. Botting Hemsley.*

ODONTOGLOSSUM × WATTIANUM
CRAWSHAYANUM.

THE history of this Rosefield hybrid (fig. 83) is as follows:—Flowers crossed, Sept. 12, 1894; seed sown, Aug. 1, 1895; bloomed nine flowers, Aug. 24, 1900, on the third bulb. The plant is of extremely strong habit, and made the largest first

parents, as Mr. Sander and Mr. Rolfe published their opinions upon "luteo-purpureum" and "Lindleyanum." I recall stating, on May 25, 1893, that I would prove my immediately formed opinion as to Harryanum by producing it from it and Lindleyanum. I have had the satisfaction of so doing. We have had the hybrid of Harryanum and luteo-purpureum shown by M. Jules Hye at the Temple Show this year as "Souvenir de Victor Hye de Crom," and a grand thing it is; but, as might be expected, the brown blotching is almost a solid mass, and not so delicately pencilled as that of my Wattianum, the natural result of Lindleyanum influence.

There has been, on the part of many who knew, an uncalled-for and extraordinary secrecy as to the habitat of *O. Harryanum*; why, it is difficult to understand, for it has hardly commanded any value worth speaking of for many years—in fact, since it was discovered that it had petals that did not spread open flat, which is a natural consequence of the peculiar structure of the flower. Now, for the first time, Mr. Rolfe has been enabled to publish its habitat as "vicinity of Yarumal, in the Antioquia district," as kindly told him by M. Florent Claes. *De B. Crawshay.*



FIG. 83.—ODONTOGLOSSUM WATTIANUM CRAWSHAYANUM.

bulb I have ever seen made by any *Odontoglossum*; its size is $2\frac{1}{2}$ inches high by 2 broad by $\frac{1}{4}$ thick. Compared to the small bulbs of imported three-bulbed plants, this is a veritable giant. The other two bulbs are each larger than their forerunner. The present growth promises a still larger one. This plant has set at rest the much-discussed parentage of the natural hybrid introduced by Mr. Sander in 1889. The original plant was bought by and dedicated to the late T. R. Watt, Esq., of Chislehurst; it changed hands at his sale, and being then in very weak health, died, though it had the best of care bestowed upon it.

The public appearance in London of the following constitute the "show" history of this hybrid:—*O. Wattianum*, Hardy's var., May 25, 1893 (Temple Show), A.M.; *O. W. superbum*, Oct. 23, 1894, R.H.S., A.M.; *O. Wattianum*, Aug. 13, 1895, R.H.S., F.C.C. All these awards gained by Mr. Sander. Baron Schroder, I believe, now owns these plants. It was a curious conclusion to the matter that the species should come last, and take F.C.C., when two varieties precede it and take but A.M.

There were at the time of its introduction few, if any, who thought of Harryanum as one of its

ORCHID NOTES AND GLEANINGS.

"DICTIONNAIRE ICONOGRAPHIQUE
DES ORCHIDÉES."

THE plants figured in the last number of this useful publication are:—1. *Cattleya Patini*, Cogn.; 2. *C. P. var. alba*, Cogn.; 3. *Chysis bractescens*, Ldl.; 4. *Cypripedium Adrastus Mariæ*, Cogn.; 5. *C. Pryorinum inversum*, Cogn.; 6. *Dendrobium speciosum*, Smith; 7. *Epidendrum O'Brienianum*, Rolfe; 8. *Eulophiella Peetersiana*, Kraenzl.; 9. *Lælia flava*, Ldl.; 10. *Maxillaria Sanderiana*, Rehb. f.; 11. *Miltonia cuneata*, Ldl.; 12. *Oncidium Warscewiczii*, Rehb. f.; and 13. *Trichopilia Galeottiana*, A. Rich.

The illustrations are excellent, and the text by Mr. Cogniaux eminently trustworthy. It is more serviceable for reference than many larger and more pretentious publications. The publisher is M. Alph. Goossens, Avenue Walkiers, 58, Anderghem, Brussels.

LÆLIO-CATTLEYA "EMPERESS OF RUSSIA."

This is the result of a cross from *Cattleya Mendeli* by *Lælia Digbyana*. It has much resemblance

* *Begonia* (§ *Platycentrum*) *Augustinci*, Hems. l.; species ex affinitate *B. xanthina*, Hook., a qua differt imprimis foliis rugosis supra hispidulis floribusque roseis. *Herba* perennis, succulenta, acaulis, scaposa, circiter pedalis. *Folia* subcarnosa, rugosa, longe petiolata, oblique rotundato-ovata, usque ad 10 poll. longa, acuminata, basi alte cordata, lobis rotundatis subaequalibus approximatis vel obtegentibus, vel interdum sinu aperto, supra hispidula vel demum glabrescentia, atro-viridia, opaca, subtus parce pilosa, rubescentia, venis crassis elevatis, margine denticulata; petioli crassi, carnosii, teretes, rubri, pilosi. *Scapi* petiolis similes et paulo longiores, pauciflori, monoici, bracteis parvis cito deciduis. *Flores* masculi circiter 2 poll. diametro; perianthii segmenta 4, duo exteriora elliptica, duo interiora oblonga, quam exteriora dimidio minora; stamina numerosa, monadelphica, distincte stipitata. *Flores* fructu minores; perianthii segmenta 5 v. obovato-oblonga, inaequalia; styli 2, bicurves, curvibus tortuosus. *Capitula* nutans, glabrescentia, inaequaliter tripartita, bilocularis, ala majore triangulari; placentae bipartitae, undique ovuliferae.

to the *Lelia Digbyana* Mossie, raised for Messrs. Veitch by Mr. Seden. This new *Lelio-Cattleya* was raised by M. Maron, and is figured in the *Revue Horticole* for September 16. It is known in this country as *L.C. × Digbyano-Mendeli*.

MASDEVALLIA HYBRIDS.

Three pretty hybrid *Masdevallias* respecting which there is some doubt as to the respective parentage, are kindly sent by Mr. J. T. Rushton, gr. to Captain Hincks, Terrace House, Richmond, Yorks, who also send records of a few of the crosses made about the time these would be in progress. "No. 1 seed germinated 1893; in November, 1892, I sowed *M. caudata* Shuttleworthi × *M. × Gairiana*, and I think this is correct." The flowers bearing the number seem to verify the supposition, as the form of *M. Shuttleworthi* modified by *M. Davisii* and

Moulmein, where it was discovered by T. Lobbs. The segments are very long and dense; the flowers brightly coloured; segments rose-coloured, spotted white at the base; lip rosy-purple, with a central stripe of a deeper purple colour.

MILTONIA VENTILARIA VAR. *CHELSONIENSIS*, t. DCCVII.—A richly-coloured form, with a semicircular spot of rosy-purple at the base of the lip. Var. *LINDENII*, t. DCCVI., with very large flowers, the segments crimson; a magnificent variety.

CATLEYA TRIANETI VAR. *RIMESADIANA*, t. DCCVIII.—Flower-segments pale rosy-lilac; lip crimson, with an A-shaped yellow blotch at the base.

LELIA SUPERBENS, t. DCCIX.—Flower-segments whitish; lip three-lobed, rosy-lilac, with veins of a darker colour, and a central white blotch.

CATLEYA GRANULOSA VAR. *SOUVENIR DE RAYMOND STORMS*, t. DCCX.—Flower-segments broad, greenish-yellow, spotted with red; lip three-lobed, central lobe purple, with a white undulated margin.

STAUROPSIS FASCIATA, t. DCCXI.—Segments spreading, narrow, yellow, with brown bands; lip white.

TUPISTRA PERAKENSIS.

A plant of this new species of a remarkable genus allied to *Aspidistra*, was received at Kew last year from Mr. Ridley, of Singapore, and is in flower in the Victoria-house. It differs from *T. nutans*, sometimes to be met with in botanical collections, in having much narrower, elegant leaves, and erect flower-spikes 8 inches long, the upper half clothed with fleshy shining purple flowers which differ again in having a pure white disk-like spreading flat stigma. A figure of it will shortly be published in the *Botanical Magazine*.

LILIUM SULPHUREUM.

Thanks to the generosity of Mr. Hildebrand, of the Shan States in Upper Burma, Kew has now in the Himalayan-house a great display of flowers of this grand Lily. Some of the stems are over 6 feet high, and bear two or three large trumpet-shaped flowers, each 8 inches long, and coloured milk-white, suffused with sulphur-yellow inside; they are almost as fragrant as *L. auratum*. This species produces bulbils very freely in the leaf-axils, being quite as prolific in this respect as the Tiger Lily; it should therefore soon be abundant in cultivation. Planted in peaty soil among the *Rhododendrons*, &c., in the big unheated greenhouse at Kew, this, and its countrymen *L. nepalense* and *L. Lowii*, have proved quite at home. It is noteworthy that the two first named, hitherto known only as Burmese Lilies, have lately been introduced from Western China by Messrs. J. Veitch & Sons.

ORCHIDS.

The following interesting species are now in flower in the Orchid-houses at Kew: *Angraecum Scottianum*, *Cynoches chlorochilon*, *Coryanthes maculata*, a three-flowered spike, the second produced by this plant this year; *Cynorchis purpurascens*, very strong; *Calanthe madagascariensis*, a new and pretty species; *Bulbophyllum grandiflorum*, an extraordinary plant, the flowers of great size; *Epidendrum osmanthum*, really a handsome garden Orchid; *Spathoglottis Micholitzii*, *Trias disciflora*, and *Eulophia Saundersiana*. W. W.

MICHAELMAS DAISIES.

The perennial Asters are still making a fine show at Kew, where they are given room to show their characters. Among the best of the taller ones are Neptune, Robert Parker, and Ariadne, with lilac flowers; floribundus, with deep lilac flower-heads; ruber, with reddish-lilac flowers. *Aster densus* is of dwarfer habit, with lilac flowers; *A. Amellus* and its variety *bessarabicus* is still in beauty, but *A. acris*, equally beautiful, is passed. *A. diffusus* var. *horizontalis* is one of the best known, but is very pretty, and merits its repute; *A. versicolor* has both white and pink heads. The Royal Horticultural Society did good service some few years ago by growing a selection of these plants at Chiswick, settling their nomenclature, and picking out the best forms for cultivation.

STOKESIA CYANEA

is in bloom at Kew on the rockery. Several more flower-heads are developing, but will probably at this late period not expand fully.

CARISSA GRANDIFLORA.

We do not remember to have seen the fruit of this plant before. It is now to be seen at Kew. The berry is of the size of a bantam's egg, ovate, sharply pointed, and reddish in colour.

CROCUS HIEMALIS

is a small-flowered species, with pure white segments. It is interesting as flowering at this season.

SOLANDRA GRANDIFLORA.

A very distinct stove shrub, is trained over the roof of the succulent-house at Kew. Its flowers are like those of a *Brugmansia* or *Datura*, but are of a yellow colour, and of striking appearance as they hang from the roof.



FIG. 84.—ENTRANCE TO THE LONG DRIVE IN THE ST. JOHN'S NURSERIES, WORCESTER.
(SEE P. 290.)

M. Veitchiana, which were the parents of *M. × Gairiana*, distinctly appears in the hybrid. The flower measures 3 inches from tip to tip, the lower divisions of the perianth nearly 2 inches. In colour it is soft yellow, with rose-coloured papillæ on the upper, and less distinctly on the upper halves of the lower segments, all three divisions being continued into orange-coloured tails. No. 2 is probably *M. Arminii × triangularis*; its flowers are white with a tinge of purple and yellow, and orange-coloured tails. No. 3, *M. Arminii × ignea*? has reddish-purple flowers with yellow tails. All are pretty, though only No. 1 is showy in the individual flower.

The last number of the *Lindenia* contains coloured figures and descriptions of the following plants:—

ODONTOGLOSSUM CRISPUM VAR. *BETHUNEANA*, t. DCCV.—A flat, pentagonal flower, with broad, acutely-pointed, spreading segments, with purplish-brown spots on a pale yellow ground.

AERIDES MULTIFLORUM VAR. *LOBBI*, t. DCCVI.—A native of

KEW NOTES.

HIPPEASTRUM (*HABRANTHUS*) *ROSEUM*.—A beautiful variety of this Chilean species is now flowering in the bulb-house at Kew. It has an ovoid, dark brown bulb an inch long, from which spring two or three linear, dark green leaves 9 inches long, followed by the flower-scape, which is only 6 inches high, and bears two flowers. These are horizontal, over 2 inches long, the funnel-shaped limb formed of six lanceolate segments of a rich crimson colour, yellowish at the base; stamens short, anthers yellow, stigma trifid. Bulbs of this were received from Dr. Cantera, of Montevideo, along with other interesting bulbous plants from that region. They have been distributed from Kew as "bulbs from Montevideo, No. 6." Planted in a pan, about a dozen bulbs together, they have grown satisfactorily. It is possible that this plant may be as hardy as *Zephyranthes candida*, which also comes from that region. It is certainly worth the attention of horticulturists.

PRIMULA FLORIBUNDA AND SAINTPAULIA
IONANTHA

are grouped together very prettily in the show-house at Kew. The yellow flowers of the first contrast with the bluish-violet flowers of the second in a very effective manner.

SHORTIA GALACIFOLIA.

Most people interested in plants know the history of this plant, but not all are aware of the deep red coloration taken on by the leaves at this season.

NEPENTHES VENTRICOSA

is a species not often seen. There is a good specimen in the Nepenthes-house at Kew. The plant is remarkable for the pitchers, which are funnel-shaped above, with a reflexed, undulating purple-ribbed rim; the tube is suddenly contracted in the middle, and expands below into a bag-shaped pouch. The colour of the pitchers is dull cream, whilst the lid is green.

SPIRANTHES ROMANOVIANA,

one of the rarest of terrestrial Orchids, is in bloom on the rockery at Kew. It would not excite an orchidomaniac, but it would delight the botanist. It is an American plant, only known in Europe in one locality in Ireland.

FLOWERS IN THE SOUTH-WEST DURING AUGUST AND SEPTEMBER.

(Continued from p. 274.)

As the autumn advances the great Fuchsia-bushes become increasingly lovely, and by the end of September are at their best, though they retain their charms well into November should the weather remain open; many of these bushes are from 10 to 15 feet in height. Fuchsia Riccartoni is most in evidence, but *F. gracilis* and *F. globosa* are also largely grown, as well as many of the older florist's varieties, all of which form immense plants that rarely suffer in ordinary winters. Of Gladioli, those of the Nanceianus section have been remarkable for the size and fine colouring of their blooms; while among the perennial Sunflowers, *Helianthus rigidus* "Miss Mellish" has stood pre-eminent. *H. giganteus*, with its growth of 8 feet and its pale yellow flowers, is also an attractive species. The Hydrangeas attain the zenith of their beauty in early September, when they form one of the most attractive features of the south-west. Succeeding equally well in sunshine and shade, provided they have a deep root-run, they are available for a variety of positions. Single plants often assume giant proportions, sometimes reaching a height of 7 feet, and a diameter of 12 feet or more, and carrying hundreds of massive bloom-trusses. The colour of these varies from bluish-pink to blue, the latter colour being by far the more attractive. Various theories have been advanced to account for the blue tint, one being that it is due to the presence of iron in the soil. In a garden that I know, however, the soil of which is heavily impregnated with iron, only two plants out of numbers grown bear blue flowers. Some hold that it arises from the plants being grown in shade, but the bluest-flowered specimens that I know, whose blooms are of Forget-me-not hue, are growing on an open cliff-edge in the fullest sunshine. The addition of iron filings or alum to the soil, a course recommended in order to produce this tint, merely results, as far as my experience goes, in a muddy and mottled colouring quite distinct from the clear tint of many naturally blue blossoms. The white Everlasting Pea (*Lathyrus latifolius albus*) has wreathed cottage-porch and trellis with a wealth of snowy blossom; and the annual, *L. sativus*, so often sold as Lord Anson's Blue Pea, or as the Mummy Pea, has borne its solitary, little blue flowers.

Of Lilies, *L. auratum* and *L. speciosum* have been in flower, but these can scarcely be reckoned as more than annuals in the majority of soils. *L. chalcedonicum* has borne its vivid scarlet blossoms,

and the Tiger Lilies have flowered well. Although *L. t. splendens* is by many ranked as the finest variety of this species, *L. t. Fortunei* appears to be far more vigorous, often exceeding 7 feet in height. The handsome *L. Henryi* has also been in flower, and in a friend's garden, *L. nepalense*, which last year threw up a shoot bearing three blooms, has this year borne eight flowers on a stem 7 feet in height. *Lobelia fulgens* and *L. rosea* have perfected their bright flower-spikes, and in heavy, retentive soil close to water, pass through the severest winters unharmed, though totally unprotected; whereas in light, dry soils, they often perish.

The Kniphofias stand almost unrivalled in their brilliant autumnal display, some of the newer forms being especially attractive; while the Montbretias create a charming effect with their orange-scarlet flower-scapes. A pretty picture was afforded by a colony of these flowers blooming on the slopes of a thinly-planted Oak-wood. *Nicotiana silvestris* is a valuable introduction, and a more striking plant than *N. affinis*, though less strongly perfumed. Herbaceous Phloxes were in flower during the early days of August, but wretched colours are often seen amongst collections of these plants, dull magentas and washed-out purples often preponderating. There is no excuse for want of selection now that such excellent varieties as the brilliant *Ætna*, *Coquelicot*, the salmon-pink *Miss Pemberton*, the white *Mrs. Jenkins*, and many others of equally distinct and satisfactory colours exist. The recently introduced *Physalis Franchetti*'s balloon-like calyces have already assumed their orange-red tint; while *Plumbago Larpentæ* has spread its soft blue over bank and rock-work.

The Tea Roses have been lavish of their autumnal offerings, and the single white Macartney Rose is daily starred with a succession of its pure blossoms. The tall *Rudbeckia laciniata* Golden Glow is an imposing plant, though almost too tall, sometimes attaining a height of close upon 9 feet, and is certainly a contrast to the dwarf *R. Newmanni*, one of the most floriferous and rain-resisting of all autumnal flowers. In the favoured south-west, *Salvia patens*, which through the summer and autumn dowers the garden with its Gentian-like depth of blue, can generally be left out through the winter with impunity; while *S. coccinea* and *S. fulgens*, both of which often flower well into November, rarely come to harm in the open. *Senecio pulcher* has been blooming through the past month; and *Sparmannia africana*, in a sheltered nook screened by a cliff-face on north and east, is bearing its white flower-clusters. *Statice latifolia* reared its lavender pyramid of minute blossoms early in August; while late in September *Sternbergia lutea* showed its clear yellow cups, and *Stokesia cyanea* expanded its purple flowers. There is an earlier form of the latter plant, which blooms in July, and is therefore preferable for many gardens; as there is of the striking *Zauschneria californica*, which is now a brilliant sight in the south-west, where *Zephyranthes Atamasco* is at present in flower in the open. *S. W. F., Devon.*

(To be continued.)

FOREIGN CORRESPONDENCE.

BRUSSELS.

THE Botanic Garden is under the general direction of M. Crépin, so well known for his researches on fossil-botany, and for his life-long study of the genus *Rosa*. From its position near the Nord Railway Station, it must be familiar to many of our readers. It is literally a town-garden, of considerable area, wind-swept, and destitute of shade. The main range of houses, of iron and glass, is placed in a commanding position on a terrace overlooking the whole garden. It is imposing architecturally, but not so well adapted for the growth of plants as more modern structures would be. The houses are open to the public from nine till noon, and from one in the afternoon till four P.M.

The herbaceous plants are arranged in their natural orders in concentric semi-circles, well-adapted for study. Long beds of Verbenas, such as we used to see in England, but do not do so now, clumps of Cannas and carpet-beds, Orange and other ornamental trees, are for the public benefit, and are apparently much appreciated.

Among the newer features of the garden is a series of beds intended to illustrate the "adaptations" presented by particular plants to particular conditions. Thus, there are beds representing desert plants, spiny and glaucous; others showing how plants adapt themselves to aquatic or marshy conditions; flowers adapted to pollination by the agency of wind or of insects; plants that climb by tendrils; plants that bury their pods in the soil, and so forth. We first saw similar arrangements carried out in the Botanic Gardens of Bale and Zurich, as was noted in our columns last year. In former times we were content to speak of these arrangements under the head of "natural history;" now we range them under the head of "Biology," "Ecology," or "Ephar-mosis;" whilst here, in the Brussels Botanic Garden, the word used is "Ethology." In any case, the illustrations of plant-conformation, as adapted for purposes of growth, reproduction vegetative and sexual dissemination, and as illustrating the genesis of species, are of great value, and calculated to attract the attention of many to whom the differentiation of species A from species B has no attraction, and for whom even the unravelling of natural affinities has no fascination. It is very curious to see that plants so arranged have often little or no affinity one with the other. In other words, the adaptation of structure and conformation to physiological function is quite irrespective of blood-relationships, the most widely separated plants show the same physiological adaptations.

The rockeries and collections of alpine seem in too dry and exposed a position, in any case there were few plants in bloom at the time of our visit.

The collection of succulent plants in one of the houses is very rich, and there are in the stoves numerous introductions from the Congo at present undetermined. A very pretty little plant suitable for covering the edges of the stages, or for rockeries under glass, is a species of *Piddingtonia*, a creeping or trailing Lobeliad, with roundish, crenate leaves, pink Lobelia-like flowers, and berries of the size and shape of small Olives, but of a rich purple colour. This should certainly find its way into our stoves.

Globba Schomburgki is a curious plant with yellow flowers resembling those of the "Dancing Girl" plant, *Mantisia saltatoria*; mixed with the flowers on the inflorescence in the axils of the upper bracts, is a number of small granular tubercles, by means of which the plant may be propagated.

Perhaps the most important special feature of the garden is the noble collection of Ferns, especially of Tree Ferns. A day at least would be needed to examine and note these plants in detail. We can only allude to a few that attracted our attention in a hurried visit. *Acrostichum decoratum* is remarkable for the double row of brown projecting scales, with which each side of its petioles is adorned; *Alsophila armata* reaches the roof of the house, *Cibotium Wendlandi* and *regale*; *Alsophila paleolata*, are all represented by superb specimens; whilst *Angiopteris Teysmanniana* is so fine that it compels an involuntary exclamation! *Marattia sorbifolia* is another fine species, well adapted for the decoration of winter gardens. But we have no intention of making any attempt to describe the contents of this garden in detail, its Orchid-houses, its tropical aquarium, and its many varied treasures. Our sole object is to endeavour to induce those who are passing through Brussels to visit the Botanic Garden.

It must be admitted that for horticulturists, continental botanic gardens are not usually attractive; the labour and money expended on them are usually far below the requirements of the case, the houses are ill-suited for their purpose, and the cultivation of the plants necessarily leaves



FIG. 85.—A VIEW OF SOME OF THE FRUIT-TREES IN THE ST. JOHN'S NURSERIES, WORCESTER.

(SEE P. 290.)

much to be desired. It is otherwise with the garden directed by that eminent cultivator M. Lubbers for so many years, and botanist and horticulturist alike will find no little to interest them in the Brussels Botanic Garden. Lastly, it may interest botanists to know that a new hall has been built for the herbarium, and for the library, so that the establishment is very complete, and calculated to render great services to Belgian horticulture. *The Rambler*.

NURSERY NOTES.

THE ST. JOHN'S NURSERY, WORCESTER.

THE nursery business of Messrs. Richard Smith & Co. was established in 1804, and its centenary therefore will occur in the same year as that of the Royal Horticultural Society. In 1804 a beginning was made with 4 acres of land, but very soon the area was increased, until now, after many additions, the nursery occupies 200 acres, and there are something like 4 acres of glass. St. John's Nursery is some little distance from the Foregate Street railway-station, but trams from thence run directly past the entrance-gates (see fig. 84, p. 287). Adjoining the nursery is an old residence known as Pitmaston House, where there used to live a Mr. Williams, a friend of Thomas Andrew Knight. Pitmaston has lent its name to several choice varieties of fruit, such as Pitmaston Orange Nectarine, and Pitmaston Duchess Pear.

There is a fine tree of the Weeping Beech close to the entrance of Messrs. Smith's nursery, a photograph of which we may sometime reproduce in these pages. It is described as the original tree of this type, and was discovered by Knight in a bed of seedlings. Upon his suggestion it was carefully preserved, and has since been propagated very extensively, as everyone knows. Our visit to Worcester was made towards the end of August, just when the earliest of the Plums were ripening.

THE HOUSES

were inspected first, and in these was seen a large collection of stove plants, such as *Codæums*, *Aralias*, *Cordylines*, *Caladiums*, *Acalypha hispida*, *Anthurium Scherzerianum*, *Thysacanthus rutilans*; also a number of climbing species. The new form of *Adiantum Farleyense*, known as *Alcicorne*, figured in the *Gardeners' Chronicle*, Mar. 4, 1899, p. 133, and a nice lot of plants of *A. Farleyense* itself.

Several houses contain a general collection of Ferns, which are cultivated in large numbers. Many of the structures contained batches of popular species of greenhouse plants, as *Bouvardias*, *Coronillas*, *Cytisus*, *Ericas*, *Rhododendrons*, *Azaleas*, *Camellias*, *Cannas*, *Liliums*, *Lapagerias*, &c.

Most of our readers are aware that Messrs. Smith have taken a large part in raising, and especially in propagating, hardy *Clematis*. Among the varieties raised at Worcester we can call to mind Smith's Snow White, Beauty of Worcester (a very valuable variety), and Princess Beatrice. It is surprising, nevertheless, to hear that the firm propagates as many as 25,000 *Clematis* plants each year.

Roses in pots also are a large item, and they appeared to be in very fine condition, about 20,000 plants were told are raised each year for distribution. *Chrysanthemums*, and many other popular flowering plants than we have made reference to, are cultivated in numbers, having a direct relationship to the demand that exists for them.

There was noticed an excellent lot of Vines and Fig-trees in pots. Of the former there were 11,000 in 11-inch pots, and 500 in 9½-inch pots. They were rapidly maturing their canes when we saw them.

Another class of plants in pots that we may mention whilst referring to the occupants of the glasshouses, is the Conifers. There are hundreds of plants of the more ornamental species and

varieties plunged in frames. Many of them were so richly coloured and graceful, that they would make excellent plants for the decoration of rooms. *Thuja gigantea aurea* was particularly attractive as seen grouped together in quantity. *Cupressus macrocarpus lutea* is also considered a very valuable plant, and develops remarkable colour. There were many plants of this in frames, but it is perfectly hardy at Worcester, so far as experience has yet shown.

HARDY PLANTS.

An artificial rockery was made some three years since, and it has been planted with a selection of alpine plants, which are doubtless more effective in spring than in August. Hardy perennial and herbaceous plants are grown in very large quantity. This part of the nursery is intersected by high hedges, at about every 25 ft. distance, and the space between them is divided into beds, which generally contain one species of plant only. Thus, there are large beds of the grand and showy *Kniphofias*, shrubby *Phloxes*, *Hemerocallis*, *Irises*, *Pæonies*, &c. We noticed *Platycodon autumnale* in blue and in white-flowered varieties; *Rudbeckia maxima*, a handsome plant, several feet high, with large Cabbage-like foliage, and fine single flowers with yellow segments, 2 inches long, and columnar disc, frequently 3 inches in length. *Agapanthus Mooreanus* was in bloom, and may be mentioned as a plant very well worth cultivating; it is hardy, and when in flower much resembles *A. umbellatus*, of which it would seem to be a miniature representative. *Hedysarum multijugum* was trailing upon the rockery, and near to it was *Eryngium dichotomum*, with pretty, but rather small flower-heads. *Patrinia rupestris*, also upon the rockery, was nearly 2 feet high; it is a well-known old rock-plant, belonging to the *Valerianæ* order, and was once known as *V. sibirica* (see *Bot. Mag.*, t. 714). The plant produces its fragrant flowers in loose corymbs in early summer. *P. sibirica* has larger flowers, but blooms at the same season. *Arundo Donax* and the species of *Eulalia* succeed finely at Worcester.

A very suitable little pool with running water has been formed for the cultivation of hardy *Nymphæas*, and they are succeeding well. Most of *Marliac's* varieties are included in the collection, which consists of about twenty sorts. The popularity of these handsome aquatics is shown by the efforts nurserymen are making to cultivate the plants.

FRUIT TREES, ROSES, AND ORNAMENTAL TREES AND SHRUBS.

In the grounds out-of-doors, one noteworthy feature is a very long, wide path, or drive, extending from the entrance gates (see fig. 84, p. 287), for about 1 mile. The borders on either side of this walk offer capital positions for the display of types of all the choicer ornamental trees and shrubs, and of Conifers. There are hundreds of thousands of trees and shrubs, and of forest trees in the St. John's nurseries, and they cover an area of 90 acres. There are few species, if any, that in a young state fail to succeed perfectly at Worcester, and the variety cultivated is so great that it would scarcely be possible in our limited space to enumerate a tithe of those we noticed in good condition. Suffice it to say that there is a good general collection of Conifers, including the newer varieties that have lately come into public notice, as well as more widely-known kinds. *Taxus semper aurea*, we were told, was a very great favourite; it colours very richly, is extremely ornamental, and being rather slower in growth than most of the Yews, it may be kept longer in a moderate-sized specimen. A few of the best trees and shrubs are represented through the nursery grounds by specimens of considerable size, that have been retained purposely, and these give a desirable appearance to the grounds, besides being in themselves highly interesting. There is a very fine specimen of the Coffee-Bean tree (*Gymnocladus canadensis*), a deciduous Leguminous tree of ex-

ceeding ornamental character. It grows higher than 50 feet, and is known by the popular name given above, because the seeds have been used in place of Coffee by residents in the northern parts of the United States, from whence the species came here. Hollies are grown in large numbers as standards and bushes, and the numerous varieties appeared to us to be in unusually good condition. *Acer Negundo variegatum*, too, was conspicuously good.

There are thirty acres of Roses in these nurseries, and a grand lot of stocks had been budded a short time previous to our visit. Roses are so popular, they are everybody's plants, but even then, it is surprising that there should be the demand for them that there is at nursery establishments the kingdom over.

Fruit-trees occupy eighty acres, and Apples, Pears, Plums, Peaches, Nectarines, Cherries, Gooseberries, Currants, Raspberries, and Strawberries, are grown in great quantity. The soil is a sandy loam, of just the nature calculated to induce trees to make a quantity of fibrous roots, which it is proved they do in these nurseries. The trees make good free growths, and the bark is clean and smooth as could be wished. Our illustration on p. 289, showing a view of some of the fruit-trees when the leaves have fallen in autumn, gives a correct idea of the type of tree the land yields—and it is a good type. We were interested to hear the names of the various kinds of fruits that were enquired for in largest numbers, and learned that some of the oldest varieties still command the largest sale.

Messrs. Smith have a considerable business with fruit cultivators for markets, and this probably accounts for batches of the Pershore Plum that we noticed. It is Victoria, however, that is the one favourite Plum with planters over the greater part of the country. Cherries, too, are needed in large numbers for the supply of the market-growers in Worcestershire, as well as private gardens. Apples and Pears as bushes, standards, or trained specimens for espalier cultivation, may be obtained in almost any quantity; and the most popular varieties in the western counties are those cultivated most numerously at Worcester.

We were surprised to see so many Raspberry-canecan, and if we remember rightly there were upwards of 20,000 stools; but there are never too many. The Raspberry has proved for several years, and especially in 1900, to be the most profitable of all the fruits cultivated by the Worcestershire market-growers, and whilst this is the case, the demand for stools will be high.

Notwithstanding the number of new varieties of Gooseberries that have been raised, the most frequent orders received are those for the well known Keepsake. This one variety with a few others, such as London, Warrington, Yellow Champagne, Whitesmith, and Pitmaston Greengage, appear to be cultivated more largely than any others.

We have only referred briefly to the different departments in this extensive and well known nursery business, and it remains now to be said, that in each there was observed the greatest respect for cleanliness and tidiness, in regard to the trees themselves, and the ground or houses in which they were growing. Messrs. Smith's St. John's Nurseries furnish a capital instance of the importance of the horticultural trade in this sea-girt country.

THE FRUITICETUM AT LES BARRES.—The *Revue Horticole* for October 1 contains an account of the formation and present condition of the collection of hardy shrubs got together by M. MAURICE DE VILMORIN. M. DE VILMORIN has become the possessor of the collections of the late M. LAVALLÉE, and has added to it from various sources, such as the Chinese Missionaries, the Royal Gardens, Kew, the Arnold Arboretum, &c. The plants are arranged as in a botanic garden, and a catalogue has been prepared. During the recent Botanical Congress in Paris an excursion was made by many of the members to Les Barres.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLLORD, Westonbirt, Tetbury, Gloucestershire.

General Work.—If the moulting up of Broccoli Cabbage, and Cauliflowers has been neglected for some reason, hoe the surface of the ground over immediately, and draw a little earth towards the stems of the plants. Remove decayed leaves from Winter Greens, and afford liquid-manure occasionally to Cauliflowers now showing heads. Do not "coddle" vegetables in frames, but it will be necessary to close the frames at night. Remove and destroy weeds wherever they may be found.

Endive.—If the plants raised from sowings made towards the end of July are still in the open ground, they should be blanched by placing flower-pots over them.

Lettuce.—Cabbage varieties which are ready for use need more protection than those in a less advanced stage of growth, and a few hard frosts would soon cause decay. Remove the plants raised from the sowing made about the second or third week in August to the frames already prepared for them. Both Lettuce and Endive are wintered here in small frames erected along the front of the Peach-houses, and we have no difficulty in maintaining a supply. Lift the plants with a good ball of earth, and press it firmly around the roots. Lettuces to be wintered out-of-doors in positions I have previously recommended should be given all the protection possible during severe weather.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Masdevallias in Winter.—The treatment afforded Masdevallias during the summer months will now need to be modified considerably. The atmosphere should be "cool," but not "cold." It is a difficult matter to convey by mere figures how high or low the temperature ought to be, as the nature, situation, and other characteristics of houses, are so varied; but as a general guide I would recommend 56° maximum, and 50° minimum, between which the temperature should vary in sympathy with outside conditions. As a whole, the plants should be kept moderately dry, and water afforded only in small quantities when the compost is becoming dry. Although these plants are bulbless, they may remain dry a long time without suffering injury; but do not withhold water until a plant shows signs of exhaustion, or recovery may be almost hopeless. Just sufficient water is needed to maintain the leaves in a plump, green state. A pure, sweet atmosphere is necessary, and freedom from draughts. Those species comprising the Chimæra section, such as *M. Chimæra*, *M. Chester-toni*, *M. vesperilio*, *M. Carderi*, *M. erythro-chæte*, *M. radiosa*, &c.; also such as *M. tovarensis*, *M. cucullata*, *M. peristeria*, and *M. macrura*, require a few degrees more warmth during winter than others. *M. Wendlandi* should be placed in the warmest house.

Spotting of the leaves is so common in Masdevallias that many cultivators regard this disfigurement as unavoidable, yet Sir Trevor Lawrence's collection proves the opposite to be true. Its cause may be a stagnant atmosphere, over-watering, too high a temperature, or cold draughts. If the plants be grown in pure air, an equable temperature, and are afforded water only when necessary, the leaves should remain fresh and green for several seasons. Spot in other Orchids is generally due to one or another of the foregoing more or less preventable causes; but upon a fine day one is sometimes tempted to water rather freely, and if the succeeding days are damp and cold, a diseased leaf here and a pseudo-bulb there prove our folly. Spot in thick-textured leaves or diseased pseudo-bulbs may sometimes be checked by pricking around the affected part with a needle or other sharp instrument; but after all, prevention is much better than cure.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of PORTLAND, Welbeck Abbey, Worksop.

Vines.—Maintain an equable temperature of about 50° in vineries containing ripe fruit. Look over the Vines twice each week, and remove decaying berries, yellow leaves, and laterals from any varieties that have continued to grow. If any

fruits of the variety Gros Colmar are not yet fully ripe, continue to afford them a temperature of 55° at night, and 60° by day. Place a cap of stiff paper over bunches of Muscats that have been ripe some time, or smear the glass over with a mixture of strong clay and water made into the consistency of thin paint. Do not allow borders in late houses to become dry, and when affording water to these let the work be done on a sunny morning, and afford the house rather more air until the surface moisture has evaporated. Vines it is intended to force early may soon be pruned, and it is well to secure a considerable interval of time between this operation and the starting of the Vines into growth. If the wood is thoroughly ripe, prune closely, and the bunches of fruit will be more compact, and the berries less liable to "shank." If the wood is not fully matured, then leave an extra bud or two on each shoot. Following the pruning, keep the house cool, and do not use fire-heat unless to exclude severe frosts. Cleanse the house and Vines, and if mealy-bug be found upon the rods let these be carefully scraped (not otherwise), and then thoroughly scrub them with a stiff brush, using strong carbolic soap during the operation. When dry, paint them over with a mixture of one part tar and three parts clay, working it into the rods, and around the spurs and young eyes. Examine all trellises, stone paths, and rafters, and stop all crevices in wood with putty, and those in stone with cement. Remove the surface soil to a depth of 6 inches, and replace with good fibrous-loam, soot, and $\frac{1}{2}$ -inch bones. When the walls for this distance below the soil-line are free, cleanse and dress them with strong paraffin oil.

Young Vines which were planted late and are in full leaf, should still be afforded warmth. Remove all laterals, and retain only the main leaves. The rods may also be shortened, according to their strength. The supernumeraries intended for fruiting next season may be allowed rods 10 or 12 feet long, but the permanent rods should be shortened to 3 or 4 feet. If the temporary Vines are strong, they will be able to carry six bunches, and the permanent rods two or three each. During warm sunny days keep a brisk heat in the water-pipes, and ventilate the house freely at the top, and very little at the front.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Lifting and Transplanting Trees.—When the garden is large enough in extent to allow of a few trees being grown for the purpose of filling vacancies as they occur, the lifting and transplanting of as many as may be necessary should not be longer delayed. If the trees have to be purchased and sent from a distance, the work cannot be proceeded with at present, as nurserymen do not lift their trees until they have shed their leaves. The lifting of trees by the gardener, occupying but a comparatively short space of time, affects the foliage little, but if it should cause it to fall away soon afterwards, this is not a matter of consequence at this season. When filling up vacancies of any description, it is good practice to avoid planting on exactly the same site as the previous trees occupied. As far as is practicable make a change also in the kind of fruit planted, so that an Apple-tree shall not succeed an Apple-tree, &c. When opening out the holes, remove every particle of old root; and if the soil is poor or exhausted, use fresh pasture-loam for planting, but in all cases provide a barrow-load or two of fresh compost for working in amongst, and covering the roots. For stone fruits, a certain amount of calcareous matter, such as old lime-rubble and plaster, should be added, whether the staple soil or new compost be used. Burnt soil and wood-ashes may be afforded every kind of fruit-tree with advantage.

Lifting should be done in such a manner that a ball of soil will remain attached to the roots. A medium-sized ball is best, because such a one may be raised and conveyed from one part of the garden to the other with tolerable certainty of its remaining intact. Save the roots that extend beyond the ball when lifting, and cut the broken parts cleanly with a knife before replanting. Any roots that have a tendency to strike downwards should be shortened, if they cannot be bent into a horizontal position when laid out afresh.

Planting.—The hole to receive the roots of the tree must be deep enough to allow of the tree being planted at about the same level that it occupied in

its former position, and if necessary to throw in more soil at the last moment, trample this firm before placing the ball in position upon it. Many trees are ruined through being planted too deeply, whilst if they be planted insufficiently deep the trees are liable to be blown about by wind, and the roots suffer more should drought occur. Be careful to fill up all interstices under and around the roots, and make the soil quite firm. Lay the roots out level as the work of filling in proceeds, and cover them with new compost. When the roots have been covered, and the soil made firm by trampling or a light ramming, afford the roots a good soaking of water that will moisten the soil to the base.

THE FLOWER GARDEN.

By J. BENSLOW, Gardener to the Earl of TEIGNMOUTH, Abbotsbury Castle, Dorsetshire.

Calceolarias.—If cuttings of these have not already been secured, the work should be done at once. A brick frame facing south-west is best. The hot-bed should be formed with fresh leaves, as these will afford quite sufficient warmth. Let the beds be from 15 to 18 inches deep, and tread them well into the sides and corners. If the leaves be dry, afford the bed a soaking of water, and sprinkle it with a little soot before adding a compost of two parts leaf-mould to one part loam and sand. If the situation be a damp one, use some powdered charcoal freely. Select as cuttings vigorous side-shoots with a heel, which should be severed neatly. The leaves may be shortened by collecting them in one hand and topping them. Insert each cutting firmly, and when all have been put in, afford them a thorough watering. Keep the frame closed for a week or nine days, but afford a little ventilation for a short time each bright morning in order for the condensed moisture to escape.

Veronicas.—The pretty New Zealand Veronicas may be propagated in the same manner. The following shrubby and evergreen species are well worth cultivating:—*V. buxifolia*, *V. carnea*, *V. carnosula*, *V. catarractæ*, *V. Chathamica*, *V. Colensoi*, *V. decumbens*, *V. decussata*, *V. epacridea*, *V. glauca*, *V. Hectori*, *V. elliptica*, *V. incana*, *V. incisa*, *V. Kirkii*, *V. Lewisii*, *V. lycopodioides*, *V. pinguifolia*, *V. salicifolia*, *V. Traversii*, and *V. vernicosa*. Many of these would prove hardy if planted on warm banks or between bold, jutting rocks during spring, using rich sandy loam. *V. Andersoni* variegata may also be freely propagated at this time; the plant is half hardy, and a stock should be provided each autumn.

PLANTS UNDER GLASS.

By T. EDWARDS, Plant Foreman, Royal Gardens, Frogmore.

Palms.—Such species as *Kentias*, *Cocos*, *Geonomas*, *Arecas*, *Latanias*, *Phoenix*, &c., that have been in the conservatory or in corridors, should now be moved to a warmer position. If there exists a special house in which to place them, all the inside woodwork and glass should be thoroughly cleansed with soapy water. Remove with an insecticide any thrip or white scale there may be upon the plants, and work the mixture well into the axils of the leaves with a stiff paint-brush. If the leaves of Palms be sponged, it gives to them a brighter appearance. Keep the plants in good health by removing dust, &c. Do not disturb the roots at this season, but an occasional sprinkling with Clay's or Standen's manure may be afforded the surface of the soil. Let the night temperature now be 60° to 65° (falling to 55° during severe weather). Take advantage of sunny days to afford less fire-heat. Syringe the plants each morning and afternoon. Small plants of *Areca lutescens*, *Cocos Weddelliana*, *Geonoma gracilis*, *Thrinax*, &c., intended for dinner-table decoration, should be afforded stove treatment.

Stoves.—Repot *Anthurium Scherzerianum* and *A. Andreanum*. Any plants of the latter that have grown too tall may be cut down. The top-growths, with as many of the aerial roots as possible, should be put in 5-inch or 6-inch pots, using a light compost of fibrous peat and fresh sphagnum-moss, with some pieces of charcoal, crocks, and silver-sand added. Afford them a warm, moist heat, and frequent syringings. Cultivate the old plants for further increasing the stock. This species flowers perpetually, and the spathe of different varieties vary from white to scarlet and deep crimson. The spathe should be fully developed before being cut, and they will last for two or three weeks in water.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Oct. 23. { Royal Horticultural Society's Com-
mittees.
Paris Exhibition (temporary show).

SALES.

MONDAY, Oct. 22.—Dutch Bulbs at Protheroe & Morris' Rooms.—Annual Sale of Nursery Stock at The Nurseries, West Wickham, by order of Mr. J. R. Box, by Protheroe & Morris, at 11.30. Two days.—Palms, Azaleas, Bulbs, &c., at Stevens' Rooms, 38, King Street, Covent Garden.

TUESDAY, Oct. 23.—Dutch Bulbs at Protheroe & Morris' Rooms.

WEDNESDAY, Oct. 24.—Dutch Bulbs at Protheroe & Morris' Rooms.—Great Sale of *Lilium longiflorum*, Continental Plants, Roses, &c., at Protheroe & Morris' Rooms. Lilliums, and other Bulbs, Palms, and Azaleas, at Stevens' Rooms.

THURSDAY, Oct. 25.—Dutch Bulbs at Protheroe & Morris' Rooms.—Twenty-sixth Great Annual Sale of Nursery Stock, at Hollauby's Nurseries, Groombridge, Tunbridge Wells, by Protheroe & Morris, at 12 o'clock. Two days.—Unreserved Clearance Sale of Plants, Glass Erections, Van, Horses, &c., at the Vineyard Nurseries, Shooter's Hill, by order of Mr. W. A. Tongue, by Protheroe & Morris, at 12.30 o'clock.

FRIDAY, Oct. 26.—Dutch Bulbs at Protheroe & Morris' Rooms.—Imported and Established Orchids at Protheroe & Morris' Rooms.—Clearance Sale of Stock, Horse, Van, and Loose Items, at the Holloway Nursery, Fir's Lane, Lower Edmonton, by Protheroe and Morris, at 12 o'clock.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—48°.

ACTUAL TEMPERATURES:—

LONDON.—October 17 (6 P.M.): Max. 65°; Min. 52°.

October 18—Fine; afterwards dull.

PROVINCES.—October 17 (6 P.M.): Max. 57°, S.W. Counties; Min., 44°, Nethland.

The Influence of
the Pollen on the
Mother Plant.

EVERY now and then we come across cases in which the action of the pollen is traceable not only in the appearance of the embryo plant, as is of course the common order of things, but also in the conformation or colour of the ovary, or of the seed-coats, which are parts of the female plant, and not directly subject to the influence of the pollen. The capsules of certain Lilies, and the seed-coats of certain Peas, and of Indian Corn or Maize, are among the best known illustrations of this supposed agency of the pollen (see Berkeley in *Gardeners' Chronicle*, 1854, p. 404). We say supposed, for the phenomena are so extraordinary that their explanation is very difficult, and an attitude of scepticism is fully justifiable. Within the last two or three years, however, discoveries have been made which are thought to furnish a clue to the interpretation of the appearances in question. Mr. HERBERT WEBBER, an honoured guest at the Hybridisation Conference in 1899, has recently published a paper on "The Immediate Effect of Pollen in Maize" (United States Department of Agriculture), wherein he reviews briefly the existing state of our knowledge on the subject, and gives the results of his own experiments.

To make a complicated matter as clear as possible, we may allude to the action of the pollen under ordinary circumstances. The pollen-tube is known to contain two nuclei, and the embryo sac to contain the egg-cell, together with certain "polar nuclei" and other bodies. When fecundation takes place, one of the two nuclei of the pollen-tube passes out of the tube into the embryo-sac, and there comes in contact with, and fuses with, the nucleus of the egg-cell, which thus develops into the embryo plant.

But, as we have seen, there are two nuclei in the pollen-tube; one is accounted for as just mentioned. What becomes of the other? The answer to this question has been supplied by NAWASCHIN in Russia, by GUIGNARD in France,

and by Miss ETHEL SARGANT in our own country. From their researches it appears that, as has already been recorded in these columns, there is double process of fertilisation. Both the pollen-nuclei enter the embryo-sac, one to fuse with the nucleus of the egg-cell, and the other with two "polar nuclei" which form the nucleus of the embryo-sac. From this last nucleus, by repeated sub-division, the "endospERM," which surrounds the embryo and supplies it with food, is developed. According to this, then, not only is the embryo-plant the result of the confluence and fusion of nuclei derived from the male and the female respectively, but the endospERM or the albumen of the seed has a like double origin. Now, it is supposed by DE VRIES and others, that the occurrence of "Xenia," or the direct influence of the pollen on the female plant, may be explained as the result of the influence of one of the pollen-nuclei on the endospERM-nucleus. We do not understand how the walls of the ovary (the pericarp) and the coats of the seed can be affected by anything that takes place in the endospERM. Mr. WEBBER is endeavouring to clear up the matter by experiments with Maize, which is peculiarly liable to manifest appearances attributable to the influence of the pollen, and therefore observable, not only in the new seedling plant, but also in the parent mother plant. We often come across particolored grains in a head or cob of Maize, and the late Mr. LAXTON showed us many such cases in the seed-coats of Maize. Mr. WEBBER's experiments, so far as they go, support the conjectures of DE VRIES, and the experiments of HENRI VILMORIN. It is needless to do more than allude in passing to the great importance to horticulture of these experiments. An entirely new aspect is opening up before us, from which the horticulture of the not distant future must necessarily benefit.

CLIPPED TREES: A REVERSION (see Supplementary Illustration).—The Romans are recorded to have practised the *ars topiaria*: monks and kings in later times used it to enclose their garden—a legitimate purpose. Then, in the later middle ages, the practice was renewed, and some quaint examples, real survivals, have come down to our own times, as in the gardens at Levens, and in the forecourt of many an obscure country cottage. Let no one interfere with these. BACON, and afterwards POPE and ADDISON, decried the fashion, and killed it with ridicule, so it was thought. Not so, however; a distinct revival has occurred, and this makes one wonder whether after all, there may not be some subtle element of goodness or beauty which renders it worthy of survival. If it were so utterly beneath contempt, would it not have died utterly instead of reappearing from time to time. In any case it is quaint, attracts attention, and gives pleasure to the possessor and his visitors—is not that the main object of a garden? The example shown in our present Supplement is in the garden of FRANK CRISP, Esq., at Friar Park, Henley, of the wonders of whose gardens we have spoken on other occasions. Visitors to the last Temple Show will have remembered a very fine exhibit of the kind from the specially appropriately named firm of CUTBUSH. Messrs. CHEAL also exhibited a group of which we gave an illustration.

ROYAL HORTICULTURAL SOCIETY.—A meeting of the committees will be held on Tuesday next, October 23, in the Drill Hall, Westminster, when a lecture on "Mistakes in Orchard Management," and illustrated by lime-light views, will be given by Mr. JOHN ETTLE.

HORTICULTURAL CLUB.—The first conversation and dinner for the session of 1900—1901

took place on Tuesday evening, October 9, and was very successful. The chair was occupied by Mr. HARRY J. VEITCH, vice-chairman of the Club, and there was a good attendance of members. An interesting address was given by Mr. GEORGE BUNYARD, V.M.H., on "The Fruit Crop of 1900;" it drew forth an animated discussion on various matters connected with the subject, and it was admitted that never in the present generation had there been such an extraordinary overflowing crop. This has entailed considerable labour on the wholesale dealers in Covent Garden and elsewhere. The grievances of fruit-growers were largely dwelt upon, the chief of these being the unreliability of the railway transport; advices were sent from growers to say that their products had been sent off and the consignees expected to receive them in due course, but they were sometimes four, six, and even eight hours late. One of the members stated that there was a project on foot to establish an automobile system, which would pick up the fruit and convey it to its destination without going near the railway. This elicited warm approval, and the hope was expressed that it might be carried out. Instances were given of the terribly low price at which Plums and other fruits had been sold, and it was considered by many that it was a great pity such an enormous crop could not be better utilised.

THE PARIS EXHIBITION.—The Horticultural Exhibition that opened on September 10 was nearly as good as the former one. The large Salle des Fêtes was again filled with fine fruit. The vegetables were very good, those shown by the firm of VILMORIN-ANDRIEU being numerous and specially noteworthy. The same firm showed a series of germinating seeds in small pans and pots; this was more curious and interesting than useful. Many of the collections were similar to those formerly sent up (Roses, Carnations, Cannas, ornamental plants, &c.). There were some splendid *Chrysanthemums*, especially fine ones being those from MM. VILMORIN-ANDRIEU, M. NONIN, M. MOLIN, M. DE PELLERIN DE LATOUCHE (M. BITON, gr.), M. LEMAIRE, and M. MONTIGNY, of Orleans. The Begonias from Messrs. BILLIARD & BARRE, and from MM. VALLERAND, BROS, were magnificent. Among MM. VALLERAND's collection was a curious but scarcely ornamental plant. Their Begonia erecta cristata has now produced a series of forms in which the crests are very long, shaggy, sometimes erect, and curling into horns or funnels; in many the blade of the petal has disappeared, and there remains merely a bunch of threads. Some blooms are like (the colour excepted) flowers of *Centaurea cyanus*. There were splendid Dahlias from MM. VILMORIN-ANDRIEU, M. PAILLET, M. MOLIN, and M. NONIN, who also staged a pretty little group of Bouvardias. But as regards Dahlias, novelties were somewhat deficient. M. RENE CAILLAND, of Mandres, sent some good double Cyclamen seedlings, and a somewhat remarkable single deep ruby Cyclamen. M. FÉRAUD, of Paris, showed a mass of Begonia Bertini, dwarf and compact, which seemed much superior to the old type. M. GOUCHAULT, of Orleans, staged three good seedlings of *Aucuba japonica*, with very large and well-coloured foliage. M. MOSER, of Versailles, arranged in the open air a clump of *Gyneryum* and various *Tritomas*. Worth notice also were a collection of *Tuberoses* and of *Lilium lancifolium* from M. THIÉBAUT, AINE; two small sets of Asters from M. FÉRAUD and M. MILLET; a clump of *Phœnix*, market plants, sent from the south of France, by M. ED. LANCE-BEYERBACH; and some fine Bromeliads from M. LÉON DUVAL, of Versailles. M. DUVAL also showed a lot of Orchids grown in leaf-mould; the plants were all in an excellent state of cultivation, but seemed in no way superior to those grown carefully in the ordinary compost, with the exception of *Miltonia candida*, which was unusually vigorous. There was also a *Cattleya Bowringiana* growing and flowering well, but M. BERT, of Bois-Colombes, had an equally fine one growing in sphagnum-moss and peat. With this latter plant M. BERT showed *Cattleya labiata*, bicolor, and

aurea; Vandas corulea and Miltonia Binoti, and a large, well-coloured Odontoglossum. M. GEORGES MAGNE, a private grower of Boulogne, had a choice lot, including Cattleya × Maronis, C. × Goossensiana, Cypripedium × Mahlere, Miltonia spectabilis, Moreliana, and other species. M. MARON showed a fine group of hybrids, including several already known, and favourite plants: Cattleya × Gaskelliana superba, of a pleasing warm mauve colour, and a seedling of unknown parentage, apparently a Sophro-Cattleya, and of a very remarkable dark violet colouring. M. BERANEK and M. RÉGNIER also showed two collections of Orchids.

"JOURNAL OF THE IRISH COUNCIL OF AGRICULTURE."—We have received from the Department of Agriculture and Technical Instruction for Ireland, a Journal of the Proceedings of the first meeting of the Council of Agriculture held in the Royal University Buildings, Earlsfort Terrace, Dublin, last May. The importance to Irish agriculture of such an institution can hardly be exaggerated, and that its aims are in accord with the necessities of the country will be understood by those who heard or read the address given by the Vice-President, the Rt. Hon. HORACE PLUNKETT. After welcoming the members who had attended this, the first meeting, he said:—"We are assembled here as a Council—I might almost say as a Parliament—representative of Irish agricultural and industrial interests, to consider the future of our country at a new stage in its development. Never before has the making or marring of our industrial fortunes been so unreservedly placed in our own hands—an event which you will readily admit calls for the best energies and enthusiasm of everyone amongst us. We are, at length, provided with a system of State aid which has been effective in enabling other nations with no better resources than ours not only to survive in the struggle for existence, but even to hold their own in the world-market. If we fail to rise to our new opportunities—if Ireland cannot follow where other countries have led, then indeed we must confess, that whatever be the mission of the Irish people, it cannot be one of which material well-being is an essential part." The Council propose to give aid, not by agitating for bounties and protection, but by organising for "experiment stations and example plots, peripatetic lecturers to explain on the spot to those for whose benefit the work is undertaken, the practical bearings of the experiments; agricultural shows in which as many workers as possible may participate, with a prize-list so designed as to reward progressive local industry; and the circulation through the local press and by cheap publications of scientific knowledge and market intelligence—all these methods have the highest sanction from Continental experience." This agricultural instruction will, of course, deal with both live-stock and crops, and the details will be arranged with special reference to the land and to the industrial character of the Irish people. The Department has a great work before it which we may hope will be successful in its results. The Journal before us includes, in addition to the report of the meeting, a valuable article on the Flax-crop, and various agricultural notes and statistical tables.

FLOWERS IN SEASON.—Mr. ELWES sends us from Colesbourne, Gloucestershire, spikes of the three best late-flowering KNIPHOFIAS:—"Fair Viennese" (Leichtlin), a dense spike of ascending orange-scarlet, tubular flowers, each about 1 inch or a little over, with projecting stamens; "Triumph," a robust form, with orange-yellow, deflexed flowers, each about 1½ inch long; "Nelsoni" is an elegant species, with slender, deflexed, tubular flowers of a rich orange-scarlet colour, like those of K. corallina.

"COLCHICUM" SPECIOSUM PURPUREUM has large flowers, an angular flower-tube, and narrow oblanceolate segments of a deep lilac colour, whitish at the base internally.

CROCUS ATCHISONI, the best autumn-flowering Crocus. The flowers are 6 inches across when fully

open, the outer segments oblong, gradually tapering to a short point, and of a lavender colour; the inner segments are somewhat shorter and broader. The style divides into numerous linear stigmatic branches, each about three-quarters of an inch long.

STERNBERGIA ANGUSTIFOLIA.—A small-flowered variety, with linear-oblong segments. It is said to be much harder than C. macrantha.

PENTSTEMON GENTIANOIDES.—A fine form of this, with lanceolate leaves and deep crimson flowers. It may be the form known in gardens as P. "Newberry Gem."

With them came a "pip" of a GLADIOLUS, of a rich scarlet colour, the three lower segments (one external, two internal), marked with a central white stripe. It is one of the finest Gladioli we ever saw, and it was, we learn, raised by Mr. MAX LEICHTLIN, but no name was attached to it.

ANEMONE JAPONICA "LADY GILMORE" is remarkable for its deeply-crippled foliage, reminding the spectator of triple-curved Parsley on a large scale.

CYCLAMEN NEAPOLITANUM, with its beautifully mottled leaves, is still in bloom on the rockery at Kew.

LINARIA CYMBALARIA.—The white form of this may be seen in bloom on the rockery at Kew.

FUNKIA LANCEIFOLIA VAR. TARDIFLORA is a dwarf, late-flowering form, with dark green, lanceolate leaves, and erect spikes of lilac flowers. It is in striking contrast to its cogeners F. Sieboldi, &c.

THE SURVEYORS' INSTITUTION.—The first ordinary general meeting of the session 1900-1901 will be held on Monday, November 12, 1900, at 12, Great George Street, Westminster, S.W., when the President, Mr. JOHN SHAW, will deliver an opening address. The chair will be taken at 8 o'clock.

THE FÊTE DE L'HORTICULTURE.—We have already alluded to this eminently French ceremonial, which came off on September 6. Those who are interested in the matter will find in the *Revue Horticole* of September 16 a series of illustrations representing various floral designs that were *en evidence* on that occasion. Among them is the "Voiturette" of our contemporary, the *Revue Horticole*, consisting of a goat-chaise, decorated with flowers. Some young girls occupying the chariot, and appropriately dressed, were supposed to represent floriculture, fruit-culture, and vegetable-culture. We sober English have a difficulty in imagining any of our horticultural journals parading in such fashion, so foreign is it to our habits; nevertheless, we can readily believe the effect was "vavissant." Here, we leave such things to the Royal Botanic Society!

CITRUS TRIFOLIATA.—Nurserymen find it impossible to follow botanists in their continual change of plant-names, says *Meehans' Monthly*. When a plant has been extensively known under a certain designation that had been acquiesced in by botanists, to be told that botanists have heretofore blundered, and the name must therefore be changed, means a commercial loss to them. If the nurseryman adopts the new name, he has to advertise all over again to let his customers know that the new name is no new thing. But even then there is no assurance that the corrected name will not again be corrected. A recent illustration of this refers to the hardy Orange. LINNÆUS first thought it a genuine member of the Orange family, and described it as Citrus trifoliata. DE CANDOLLE thought LINNÆUS wrong, and removed it to another genus, *Ægle*, and describes it as *Ægle sepäria*. *Index Kewensis* does not sustain this view, and it appears there under the Linnean name with that of DE CANDOLLE as a synonym. Now comes the *Gardeners' Chronicle*, of April 28, with a note by Mr. NICHOLSON, the Curator of Kew, in which the name of *Ægle sepäria* is again revived for our former hardy

"Orange." When two high authorities, both in Kew Gardens, disagree as to the legitimate name, what is the unfortunate nurseryman to do? *The National Nurseryman (Rochester, New York)*. [Stick to the garden name: write Citrus trifoliata, Hort., and cite the other names as synonyms when accuracy is necessary. Ed., *Gard. Chron.*]

ICONES SELECTÆ HORTI THENENSIS.—A series of plates and botanical descriptions of plants growing in the gardens of M. VAN DEN BOSSCHE, at Tirlemont. The plants figured in the 6th and 7th fascicles are Hibbertia dentata, Rhus Osbecki, Ugni Molinæ, Epilobium Fleischeri, a species, which if we mistake not, grows in the immediate vicinity of some of the Swiss glaciers; Gnidia planifolia, Menispermum dauricum, a native of Mongolia and Northern China; Viminaria denudata, Anisacanthus virgularis, Grevillea vestita, and Hedychium coccineum.

"BELGIAN HORTICULTURAL YEAR BOOK."—Early in the coming year will be published a directory of Belgian nurserymen, under the name of the "Annuaire belge de l'Horticulture, de l'Abriculture fruitière et de la Culture Maraichère et des industries qui s'y rattachent." The first part will contain an account of the horticultural societies, schools, journals, and other information relating to horticulture in general. The second part will contain a complete list of nurserymen, fruit-growers, market-gardeners, &c., in Belgium. We do not know if any portion of the completed book is to be in English, but if so we suggest that the proofs be submitted to some friendly Englishman for revision. The Editor is M. LOUIS DE VRIESE, Coupure, 15, Gand, Belgique. The book will be of great service to business men having relations with Belgium.

LATE PEAS.—We received a week since from Messrs. J. CARTER & Co. some pods of their variety named "Michaelmas," which had been grown in the gardens at Compton Bassett, Wiltshire. A letter which accompanied the samples states that the variety had yielded a good crop for a month past, and those sent are from the latest row of plants. The pods were very satisfactory, and at a stage just short of being quite filled.

DIOSCOREA FARGESII.—This is a new species from China, described by M. BOIS in the *Bulletin* of the Botanical Society of France. It has digitate leaves, and produces small globular tubers at a short distance below the surface of the soil, so that it has not the inconvenience attending the removal from the ground of the deep-rooting D. batatas. So far it has proved hardy in Paris, and it is thought that it may be useful for purposes of hybridisation.

"HOOKER'S ICONES PLANTARUM."—This publication, specially devoted to the illustration of new or rare plants in the Kew Herbarium, is edited for the Bentham Trustees by Sir WILLIAM T. THISELTON DYER. The August number contains descriptions and figures of various plants by members of the Kew staff; thus, we find Mr. HEMSLEY describing Castilloa Tunu, a rubber-producing species from Honduras; Pandanus Cominusii, a Solomon Island species from which the native mats are produced; Cydonia Cathayensis, a Quince, presumably native to China; and Tupidanthus calyptratus, which we saw recently in flower at Berne. Mr. SKAN describes several new Oaks from China. Dr. STAFF also contributes an account of several new genera of botanical interest.

SCALE INSECTS.—Mr. NEWSTEAD has reprinted separate copies of his very valuable paper on the scale insects and mealy bugs found in Britain. The original paper was printed in the *Journal of the Royal Horticultural Society*, but many, whether entomologists or gardeners, will be glad to possess a separate copy of this important document, which may be had from Mr. NEWSTEAD, Grosvenor Museum, Chester.

"IDEAL HOMES FOR THE PEOPLE."—A little treatise advocating for building purposes a new, substantial, and cheap form of construction for country residences of all sizes. A skeleton framework of fire-proof timber is set up, and the interstices are filled with coke-breeze or other concrete. We recommend those about to build cottages or bungalow residences to consult this little book, which may be had from Messrs. CLARE & ROSS, architects, Chelmsford.

AVOCADO PEARS.—The so-called Pears are the fruit of a *Laurus*. The fruits are much esteemed in the West Indies, and are occasionally seen in our markets. A few days ago a number might have been seen in the shop-window of Messrs. WEBBER, of Covent Garden.

MERITE AGRICOLE.—Among numerous promotions in this Order, we note the names of Professor DEHERAIN, M. PRILLIEUX, M. RISLER, M. SCHLESING, M. TISSERAND, and M. VIGER, all well known names in French horticulture and agriculture.

CONGO PLANTS.—MM. DE WILDEMAN and DURAND are publishing, on behalf of the Government of the Independent State of Congo a series of quarto illustrations with descriptions of new plants from the Belgian Congo. The plates are well executed, and the text is as carefully elaborated as the repute of the authors would lead us to expect.

NATIONAL CHRYSANTHEMUM SOCIETY.—It is pleasing to note that this Society, whilst remaining national, has paid the French Society the graceful compliment of offering a gold medal, and several other medals, to be competed for by the French exhibitors on the occasion of the show in Paris, on October 31.

YERBA MATE (LA PLATA TEA).—It is reported that a company has recently been organised to cultivate Yerba Mate, and is expected to start planting immediately. This is the first attempt at the cultivation of the plant on a large scale, as hitherto it has all been taken from the Yerbales, where it grows wild. In all the River Plate counties the consumption of this Tea is enormous, hence it is believed that the cultivated product will prove a great success.

FRUIT-STAINED CULINARY WARE.—One recommendation for enamelled iron kitchen-ware is that their price is as nothing compared with brass or tinned-copper vessels of the same character; it has been found, however, that this recommendation is of little value when fruits are being treated over a clear fire or on a kitchener. First there is a slight discoloration, and then the fruit-stain becomes fixed. The usual modes of cleansing are at fault, but there has recently been recommended to us a cleansing material and process by means of which the enamelled surface can be made to attain its pristine purity. Thus:—Fill the saucepan (if that be the vessel) with cold water, add one teaspoonful of chloride of lime to each half gallon, and boil until the stain is removed. The time will, of course, depend on the density of the stain.

THE DURHAM COLLEGE OF SCIENCE.—From the Durham College of Science, Newcastle-upon-Tyne, comes a prospectus of the Agricultural Department, Session 1900-1901. This mentions the regulations of the college, the arrangements for the residence of students, the courses of study prescribed, and the opportunities afforded for practical tuition and experiments, as well as for indoor work, lectures, &c. We need hardly add the comment that the scientific study and practice of agriculture are likely to produce excellent results compared with the uncertain and unbusinesslike methods of former days.

THE "BEN CANT" MEMORIAL PRIZE FUND.—The following subscriptions have been already promised:—The Dean of Rochester, £5; the Rev.

J. H. Pemberton, £1 1s.; Messrs. G. W. & H. Birch, £1 1s.; Messrs. W. Paul & Son, £2 2s.; E. B. Lindsell, £1; Rev. F. R. Burnside, £1; the Rev. F. Page Roberts, 10s.; George Prince, £1; Messrs. Paul & Son, £1 1s.; Charles J. Grahame, £2; the Rev. A. Foster-Melliard, £1; the Rev. H. H. D'Ombraim, £1; Edward Mawley, £1; O. G. Orpen, £1 1s.; the Rev. E. Bartrum, D.D., £1; Captain Ramsey, £1; J. T. Strange, 10s.; George Bunyard, £1; Dr. Seaton, 10s.; the Rev. G. E. Jeans, 10s.; A. Hill Grey, £1; Captain Christy, £1; Alfred Tate, £1 1s.; Messrs. Alex. Dickson & Sons, £1 1s.; T. D. Pawle, 10s.; Messrs. Prior & Sons, £2 2s.; H. V. Machin £2 2s.

SIR HENRY ACLAND.—Those who remember what Oxford was in the fifties, how obstructive to educational progress it was, and how nobly Dr. ACLAND withstood prejudice and opposition, will always hold his name in grateful and reverent affection. With the aid of the late Dr. DAUBENY he battled to secure a recognition for science in the University, and the noble museum and the development of science teaching and of the medical school stand as memorials of his gentle insistence.

THE LORD MAYOR AND THE FRUITERERS' COMPANY.—On Tuesday evening, in accordance with an ancient annual custom, the Fruiterers' Company presented the LORD MAYOR with a choice assortment of home-grown fruit, the ceremony taking place in the drawing-room at the Mansion-house. Mr. JOSEPH DAWSON, the Master of the Company, made the presentation. The LORD MAYOR, in reply, spoke of the excellent work done by the Fruiterers' Company, in giving prizes and by other means, to encourage the growth of fruit in this country. It was very gratifying to him to see such splendid specimens of home-grown fruit, and he regarded it as a melancholy fact that so much money was sent out of the country for the purchase of fruit which might be produced at home. The LORD MAYOR and the LADY MAYORESS afterwards entertained the Fruiterers' Company and the General Purposes Committee of the Corporation at dinner. In proposing the toast of "The Master, Wardens, and Court of the Fruiterers' Company," the LORD MAYOR remarked that the Corporation of the City of London gloried in traditions. They were delighted to observe old customs, and their gathering that evening was in accordance with ancient traditions. Mr. DAWSON, in responding, stated that the Fruiterers' Company were now formulating a scheme by which they hoped that the existing means of bringing fruit into London would be greatly facilitated.

DINNER TO THE EMPLOYÉS OF MESSRS. HURST & SON.—On the evening of the 10th inst., Mr. N. N. SHERWOOD entertained the whole of the staff of Messrs. HURST & SON, of Hounsditch, at dinner at the Holborn Restaurant, in celebration of the marriage of his daughter on the previous day. Mr. SHERWOOD stated there were thirty-two persons at present in his employ who had served the house for periods extending from seventeen to thirty-six years.

PUBLICATIONS RECEIVED.—*The Journal of the Board of Agriculture*, September, 1900 (Laughton & Co., 1, Essex Street, Strand, W.C.). This includes papers on: the Influence of Manures on the Botanical Composition of Grass Land, by W. Somerville, D.Sc.; Imports of the Cereal Year, Foreign Crops; and other matters.—*The Orchid Review* (illustrated), October (Marshall Bros., Keswick House, Paternoster Row, E.C.).—*The Book Lover*, September. Devoted to brief notices of new books, and to book jottings generally (Hutchinson & Co., Paternoster Row). *Science and Practice in Gardening*. An epitome of Twenty-four Lectures by the Staff of the South-eastern Agricultural College, Wye, and J. Wright.—*The Injurious Scale Insects and Mealy Bugs of the British Isles*, by Mr. R. Newstead, Curator of the Grosvenor Museum, Chester. Reprinted from the *Journal of the Royal Horticultural Society*, with photographic illustrations by the writer.—From the Essex Technical Instruction Committee Report on the Visit of the Essex Farmers' Party to Denmark, May and June, 1900. Compiled by T. S. Dymond from notes taken during the trip by members of the party, from manuscripts of the addresses delivered, and from information supplied by the Danish experts and others, and illustrated from photographs

by Mr. W. E. Watkins and Mr. F. Hughes (County Technical Laboratories, Chelmsford).—*Report on the Phenological Observations for 1899*, by Edward Mawley, F.R.H.S. These reports increase in value with every year in which the observations are carefully registered and tabulated.—*Les organisations de l'Horticulture Danoise*. Par Andreas Madsen (Copenhagen, Imprimerie Nielsen & Lydiche).—*Journal de la Société d'Horticulture du Japon*, Nos. 98 and 99, for July and August, 1900. Published at Tokio, and printed in Japanese.—*Annales Agronomiques*, August 25. This includes a paper by M. P. P. Deherain, on the Cultures du Champs d'Experiences de Grignon.—*Journal de la Société Nationale d'Horticulture de France* (84, Rue de Grenelle, Paris).—*Bollettino della R. Società Toscana di Orticultura*, August and September.—*Tijdschrift voor Tuinbouw*.—*Agricultural Journal*, Cape of Good Hope, August 30.—*Nuovo Giornale Botanico Italiano*, October. Includes: Contribuzioni all'algologia romana, by A. Colozza; Contribuzioni alla Flora del Piemonte, I. Flora; Cressentine e delle colline del Monferrato, by T. Ferraris; and Alcune ricerche sulla struttura del fusto, delle foglie, e dei frutti di un esemplare di *Juniperus drupacea*, by C. Papi.—*Report on the Progress and Condition of the Government Botanical Gardens, Saharanpur (and Arnigadi)*, for the year ending March 31, 1900. "The season was very unfavourable: the rain was excessive during June and July, while there were only slight showers in August and September. The successful working of the Saharanpur Gardens under these circumstances was largely due to the generous co-operation of the Irrigation Department. There was practically no frost during the winter. . . . The crops of fruit were only moderate, except in the case of the Vines, for which the dry season proved suitable. The Date Palms continue to progress. The report contains an interesting account of Date cultivation in Persia. Experiments are being tried with many varieties of imported fruit-trees. An endeavour has been made to propagate Mangos by budding, instead of by grafting, and interesting results have been obtained."—*Jamaica, Annual Report of the Public Gardens and Plantations*, for the year ending March 31, 1900, by W. Fawcett, B.Sc., contains a detailed account of the various crops, and of the measures of success obtained with them.—*Bulletin of the Botanical Department, Jamaica*, edited by William Fawcett, B.Sc., July, 1900. Contains articles on: Rice Culture in the United States (concluded), and the Pomegranate.—*Bulletin of Miscellaneous Information*, Botanical Department, Trinidad, July. With notes on the Coco-nut and Plant Vitality, Myroxylon Pereira, or Balsam of Peru; Tobacco, Banana Disease, Ipomea Horsfallia, and Seedling Canes.—*Royal Botanic Gardens, Ceylon*, "Circular," July, 1900. Contains papers on: Selected Trees suitable for Shade, Wind-belts, Timber, and Fuel Reserves, &c., by H. F. Macmillan, Curator; and Insect Pests attacking the foregoing Trees in Ceylon, by E. Ernest Green, Government Entomologist. Also, Notes on Ceylon Botany, signed X. Y. (reprinted from the *Ceylon Observer*).—*Lophocarpus of the United States*, and *Sagittaria Eatonii*, by J. G. Smith. Printed in advance from the Eleventh Annual Report of the Missouri Botanical Garden, September 27, 1899.—*Notes on the Mosquitoes of the United States*, by L. O. Howard. From the United States Department of Agriculture, Division of Entomology, Bulletin No. 25.

PLANT PORTRAITS.

ANODA LAVATERIODES.—*Melchior's Monthly*, September.
AOTUS GRACILLIMA, Meissner.—*Revue de l'Horticulture Belge*, September. A New Holland Leguminous plant, with linear leaves, and long clusters of small yellow, pea-shaped flowers.
AVOCADO PEAR, PERSEA GRACILISSIMA.—*Revue Horticole*, Oct. 1.
BEGONIA LAFAYETTE.—*Revue de l'Horticulture Belge*, Sept. A double red, tuberous-rooted variety.
CYTISUS CANARIENSIS.—*Revue de l'Horticulture Belge*, October.
ERICA WILMOREI.—*Revue Horticole*, September 1.
GOOSEBERRY WHINIAM'S INDUSTRY.—*Bulletin d'Arboriculture*, &c., September.
ISCARVILLEA COMPACTA, Maximowicz.—*Garten Flora*, Sept., t. 1479. Western China. A beautiful hardy perennial of the Bignonia family.
MAGNOLIA YULAN "ALEXANDRINA."—A late-flowering variety. *Revue de l'Horticulture Belge*, October.

THE WEATHER IN WEST HERTS.

THE past week has been the coldest since the early part of May, and owing to the great warmth of the previous four days, has appeared colder by contrast than it really was. On four successive days the shade temperature in the warmest part of the day failed to reach at any time 54°, and on the coldest night, that preceding the 16th, the thermometer exposed on the lawn indicated 5° of frost.—the greatest cold as yet recorded this autumn. The soil is now becoming cold, but is at present 4° warmer at 2 feet deep than at 1 foot deep, showing that the cold has not yet had time to penetrate to the lower level. A little rain fell on three days, but only sufficient to moisten the surface of the ground. There has again been a good record of bright sunshine, the average duration amounting to 5½ hours a day, which is about 2 hours a day in excess of the October average. The wind has

varied greatly in strength during the week. On one day the mean rate of movement was less than a mile an hour, whereas three days later it averaged 12 miles an hour. The above-mentioned frost did no injury whatever to either *Nasturtiums* or *Dahlias*. *E. M., Berkhamsted, October 16, 1900.*

BRITISH OAKS.

THE points of difference between the pedunculate and sessile-flowered Oaks, to which Mr. W. R. Fisher calls attention in the *Gardeners' Chronicle* of September 22, are, we should imagine, familiar to most foresters in Oak-growing districts where the two species are fairly common. In many localities, however, it is very rarely that one comes across the sessile-flowered Oak at all; and in this neighbourhood it is probably the rarest indigenous tree that we have. Why this should be so I am unable to explain, as we have soils poor and dry enough for anything, and it can hardly be due to any peculiarity of soil or climate.

In planted woods, one reason why the pedunculate variety should be the more common, may be found in the fact that it is almost invariably the Oak of the park and hedge-row, and in such situations its wide crown not only favours the production of a heavy crop of acorns, but the trees growing on grass, the acorns may be collected much more readily than in Oak-woods, where the surface-growth is usually of a ranker nature. As nurserymen make no distinction between the two, the men who collect acorns for them naturally select those trees beneath which they can pick them up in the quickest time; and which, growing on spots to which the odd-jobber has easy access, are come across most readily.

Years ago, however, when the chief aim in view was the production of ship-timber, some method of selection may have been in use when planting or sowing, as the pedunculate Oak is much better adapted for producing knees and crooks for boat-building than the other. In those days, the aim of the forester was almost exactly the opposite of what it is (or should be) to-day; and an Oak which naturally developed a tall, straight stem was considered an undesirable acquisition in a wood. Owing to the straighter growth of *Q. sessiliflora*, its lower limbs do not attain to the size of those of *Q. pedunculata* compared with the trunk, while those which form the crown usually spring from the trunk much closer to each other, and at a more acute angle (see photographs, figs. 86, 87). In a paper contributed to the *Transactions of the Royal Scottish Arboricultural Society* on "British Oaks," by Mr. John Smith, of Romsey, the writer states that: "At the time Oak-timber was in demand for the navy, sessiliflora, or the durmast Oak, was not considered fit for that purpose; indeed, it was through the purveyors for the navy that the distinction was often drawn as to its inferior quality, being, it was said, more liable to dry-rot; and this tradition still lurks in the mind of the older woodmen, several tales being told and localities named as to how these worthy gentlemen were deceived into passing the durmast Oak."

Evelyn draws attention to the difference between what he calls *Quercus urbana* and *Quercus silvestris*, the former "growing more upright," the latter "affecting to spread in branches, and to put forth its roots more above ground," evidently meaning sessiliflora and pedunculata respectively. He recommends the planting of the large-spreading Oaks for the excellence of the timber.

Brown was a firm believer in the superior quality of the timber of pedunculata, and strongly urges planters to use it in preference to sessiliflora, which latter, by-the-by, he thought to be the quicker grower of the two. Hedrew attention to the fact that the general appearance of the trees is a surer means of identification than their botanical characteristics, with which most practical men will agree. One of the most marked characteristics is, as already stated, the formation of the crown. In peduncu-

lata, the natural tendency is to become semi-spherical or globular, and while the lower branches are horizontal, they gradually ascend and form a sharper angle towards the top of the tree. In sessiliflora,



FIG. 86.—SESSILE OAK: *Q. SESSILIFLORA*, GROWING ON DEEP LOAM, BOWOOD, WILTS.



FIG. 87.—PEDUNCULATE OAK: *Q. PEDUNCULATA*, GROWING ON DEEP LIGHT LOAM, BOWOOD, WILTS.

on the other hand, there appears to be a point in the growth of the tree at which the whole of the branches which form the crown begin to ascend at pretty much the same angle, giving it an oval or elongated shape.

This does not hold good in all trees, and conditions of growth modify it more or less in many cases, but these two crown types will be found generally represented in the two species. To the botanist such characteristics would have no significance, and it is not difficult to understand the reluctance of many to accept distinctions which are rather general than particular, and which have a tendency to disappear when one goes closely into details.

Mr. Fisher states that the pedunculate variety comes into leaf later than the other. In the report of the Forest Phenological observations made in all parts of Germany from 1885 to 1894, I find it stated that out of twenty stations from which returns were obtained, ten gave the leafing of sessiliflora two days; five, three days; three, four days; and two, five days behind pedunculata. Hess also states sessiliflora to be later than pedunculata.

Of the two, sessiliflora is said to suffer less from insects, especially from the attacks of the Oak-leaf roller-moth, which occasionally defoliates the Oaks over large areas. Mr. Smith, in the article referred to above, states that in an attack in 1888, sessiliflora was almost uninjured by the caterpillars; and a resident in the Forest of Dean noticed the same thing in 1881, another point of distinction which the botanist would ignore, but which is of importance to the forester. *A. C. Forbes.*

TREES AND SHRUBS.

THE MOCKER-NUT (*CARYA TOMENTOSA*).

ALTHOUGH the *Caryas* have hitherto been unaccountably neglected in English gardens, they undoubtedly rank amongst the very best of fine-foliaged trees. *C. tomentosa*, and the rather similar *C. sulcata*, for instance, are in some respects the most striking of all hardy trees bearing pinnate leaves. No others have foliage whose leaf-divisions are so large. They are both stately trees, notable in a young state for their straight, erect trunk, and well-balanced growth. In *C. tomentosa* the leaf consists of five divisions, the three terminal ones of which are considerably larger than the basal pair, each leaflet measuring 1 foot in length, by 6 inches in width. The largest leaves are about 20 inches long, the leaf-stalk and under-surface being downy. These measurements will show this tree to be one of the most striking of any of a similar character that can be grown in this country. But besides the size of the leaves, and the handsome form of the tree, it has one other merit that is particularly in evidence just now. This is the splendid autumnal colouring of the foliage. In both *C. tomentosa* and *C. sulcata*, the leaves die off beautiful bright yellow. This colour, together with the great size of the leaves, render them, in the early days of October, perhaps the most impressive of hardy trees. There are some nice specimens in the arboretum at Kew, not as yet more than half grown, but still large enough to show the qualities of the species. During the sunny days in the early part of the month, they lit up the grounds almost as much as groups of Sunflowers do. *Caryas* are more appreciated on the continent than they are with us, and it is only here and there that they are grown for sale by our nurserymen. All of them are natives of North America, most of them being known as Hickories."

GLEDITSCHIA JAPONICA.

Among the more recent introductions from Japan this new *Gleditschia* is worthy of mention, as likely to prove a handsome and interesting addition to our hardy trees. Professor Sargent, to whose travels in Japan a few years ago we owe a very extended knowledge of the forest flora of that country, says that, as it appeared on the mountains of Japan, this *Gleditschia* is a more beautiful tree than any of the species common in cultivation, and that it may be expected to become a valuable addi-

tion to the exotic trees suitable for the parks and avenues of the United States and Europe. There is a batch of young trees at Kew which, although only a few feet high, promise to bear out this opinion. In Japan it grows 60 feet to 70 feet high, and, like the American "Honey-Locust" (*G. triacanthos*), it is very formidably armed with branching spines. The leaves, which are usually doubly-pinnate, measure 10 in. to 12 in. in length. The flowers of the *Gleditsias* are, of course, of no account as regards beauty, being very small and green; but the seed pods are always striking, and are, indeed, amongst the most remarkable to be seen in our hardy trees. In this Japanese species they are thin and flattened, wavy, and upwards of 1 foot long. Prof. Sargent says that long strings of these pods are displayed for sale in many towns of northern Japan, the pulp they contain being used for washing cloth. *W. J. B.*

CULTURAL MEMORANDA.

AGAPANTHUS UMBELLATUS IN THE FLOWER-GARDEN.

FOR breaking up the somewhat flat bedding system practised in these gardens, nothing has proved better than this well-known plant. We have a score of healthy plants in 16-inch pots. They have bright green arching foliage, and the flowers are produced on stems from 3 to 4 feet high. The pots are partially plunged, and the plant's ample leafage screens what portion remains above ground.

When the plants have made several crowns, and appear to have become too large for the pots, they are divided during the months of February and March. A compost consisting largely of loam, with some old mortar rubble and a small portion of dried cow-manure and river-sand, suits them well.

Copious supplies of water are afforded throughout their season of growth, and the plants are removed to the houses on the approach of sharp frosts. During winter sufficient water is afforded them to prevent the soil becoming quite dry. A disused greenhouse, or a fairly dry cellar, will suit the plants for the winter.

In mild districts near the sea this African plant is sufficiently hardy to withstand the winter, if some protection be afforded about the crowns and roots.

ABUTILON SAWITZII.

I have found that this pretty variegated plant is not suited for bedding-out in summer in this district. Even after a period of preparation by hardening the plants, the variety has proved to be too delicate for this purpose. The leaves have little substance in them, and they soon become brown and blistered. A few plants that I have cultivated for a time in a cool greenhouse are damaged in a lesser degree. This pretty *Abutilon*, therefore, requires the conditions of a temperate-house in order to develop suitably for decorative purposes.

There is no prettier plant for the ornamentation of the dinner-table. If cuttings be taken at once from plants that have become leggy, they will become rooted before severe weather occurs, and should then be potted off into 2½-inch pots, and placed on a shelf near the roof-glass in a warm temperature. *H. T. Martin, Stoneleigh Gardens, Kenilworth.*

THE CULTIVATION OF HERBS IN SURREY.

THE extent to which herbs are sold in the Midland and Northern counties would probably surprise a chemist's assistant from the South of England if he were to take a situation in a large manufacturing town, such as Sheffield, Lancaster, or Leicester, &c. The mill operatives prefer, as a rule, to doctor themselves with herbs, and succeed fairly well in the treatment of all ordinary ailments. Some of the herbal remedies, such as

composition essence, are regularly used as a drink by those who start early in the morning to their work, thus saving the time required to make a cup of tea. A teaspoonful of the liquid added to a cup of water makes a drink that stimulates the circulation of the blood as quickly and as effectually as a cup of warm tea. Herb beer is also largely used as a drink, being less intoxicating than ordinary ale, besides being cheaper. The trade in packets of herbs is therefore one of considerable magnitude. The herbs are generally imported from Germany, but the inferior quality of German produce, arising from various admixtures of other plants, dirt, or excessive drying, which reduces the herbs to stalks and powder when much handled, has led to an endeavour to grow in this country those most in demand.

During the last three or four years an attempt to produce a better quality of herbs has been made by Messrs. Potter & Clarke, the well-known wholesale herbalists, who have now a herb farm of about 40 acres devoted to this purpose near Carshalton, in Surrey. The herbs principally grown at present are Pennyroyal, Peppermint, Hyssop, Yarrow, Mugwort, Wormwood, Tansy, Feverfew, Marsh-mallow, Germander (*Teucrium chamaedrys*), Rue, Lavender, Balm, American Golden Rod (*Solidago*), Comfrey, Greater Celandine (*Chelidonium majus*), Southernwood (*Artemisia abrotanum*), Stinking Orache (*Chenopodium olidum*), and Cotton Lavender (*Santolina chamaecyparissus*). Small quantities of Belladonna and Henbane and Savine are grown, and a notable quantity of *Datura tatula*, the purplish stems and lilac flowers of which were in excellent condition at the time of my visit, early in August. The plants are grown in rows, with sufficient space between most of them to allow a little circulation of air between the separate plants when fully grown. In the case of Camomile and Tansy and Cotton Lavender, the long ridges presented a mass of white or golden colour that gave quite a pretty appearance to the fields.

The ordinary culinary herbs are also cultivated to a considerable extent for the purpose of preparing powdered flavouring herbs for winter use. These include Parsley, Spearmint, summer and winter Savory (*Satureia hortensis* and *S. montana*), garden Marjoram (*Origanum marjorana*), Thyme, Lemon Thyme, Tarragon (*Artemisia dracuncululus*), and Red and White Sage.

The Peppermint, Pennyroyal, Lavender, Balm, Savine, and Tansy, are not grown for distillation of oil, but for dried herbs only. The Marsh-mallow is grown not only for the herbage, but for the fresh roots, for which there is a limited demand; and so far as I know, Messrs. Potter & Clarke are the only cultivators of it for this purpose. The double Camomile flowers are dried on the spot by dry-heat on trays in a drying-room, as the weather permits, but as they do not last long in good condition, it is no easy matter to pick them at the right moment in dry weather, and to dry them off quickly of good colour, when there are large quantities to deal with, the dried flowers having usually to be subsequently sorted according to colour. The foliage of the Camomile is also dried as a herb, there being a fair demand for it as an ingredient in herb-beer. The herbs when coming into flower are cut and tied into packets and dried in the shade in large sheds, hung on strings, and packed as closely as allows a thorough current of air to pass through in every direction. The rapidity of drying depends, of course, upon the weather to some extent, in fine weather taking about four or six days.

The largest demand at present is for Pennyroyal, Yarrow, Hyssop, Peppermint, Feverfew, Marsh-mallow, Wormwood, Mugwort, and Rue. For *Chenopodium olidum*, curiously enough, there is a demand for more than the firm is yet able to grow. The plant is somewhat unsatisfactory, as it will sow itself where it is not wanted, and communicates its fishy odour to everything it touches—temporarily, at all events. Savine herb is in less demand than formerly, but the demand for Yarrow, which is a

very popular diaphoretic for a cold, is so large, that although it grows wild almost anywhere, it is so much finer under cultivation that it pays to grow it. *Santolina chamaecyparissus* is chiefly exported to our colonies. The soil is sandy and gravelly, but is so well manured that it has quite a blackish colour, and the plants evidently thrive well. The ground is level, and is ploughed as in a Wheat-field, each herb having a separate ridge to itself right across the field.

The cultivation is under the charge of Mr. Wren, who takes great interest in the venture, and who kindly conducted me over the herb-farm. At present it cannot be said to be profitable, the expenses of buildings for drying the herbs and of rent for land and labour at present only being paid for out of the produce, leaving practically no profit. But these are initial expenses necessary in every business, and if the higher price obtainable for carefully-dried, well-grown English herbs can be kept up, there seems a probability that in a few years the growing of herbs may be made a paying industry. Mr. Wren hopes in time to be able to grow such rare herbs as Ground Pine (*Ajuga chamaepitys*), and possibly some American plants, such as *Scutellaria lateriflora* and *Hamamelis virginica*. Ground Pine is gradually being exterminated on the Kentish Hills, and if some of the rarer herbs can be cultivated on a commercial scale, several of our less common British plants will be spared to rejoice the eyes of botanists. The continued use of such plants as Yarrow, Ground Pine, Germander, Vervain, Woodsage, &c., generation after generation, seems to indicate that they might be worthy of chemical investigation. As yet we can hardly say that we know the principles to which the diuretic and cholagogue properties of Dandelion, and the tonic properties of Camomile are due, although they are both British Pharmacopoeia articles. *E. M. Holmes, F.L.S., in "Pharmaceutical Journal."*

Obituary.

WILLIAM ADAM GATER.—This noted Rose cultivator, for many years at the Royal Nursery, Slough, died at Slough on the 15th inst., at the age of 65, after a wasting illness of some weeks. Born at Cheshunt, he was in early life apprenticed to Mr. Adam Paul, the father of Mr. William Paul, of Waltham Cross, and entered the service of the late Mr. Chas. Turner in 1858, having charge of the Rose department, and especially the culture of specimen Roses in pots for exhibition. One of his greatest successes was on the occasion of the great International Horticultural Exhibition and Botanical Congress, held at South Kensington in May, 1886, when first prizes were awarded to Mr. Turner for ten Roses in pots not exceeding 13 inches in diameter for a single specimen; with twenty Roses in pots not more than 8 inches in diameter; and a second prize for six standard Roses in pots. Of the ten Roses shown in 1886, *B. Souvenir de la Malmaison*, *Tea Souvenir d'un Ami*, and *H.P.'s Victor Verdier* and *General Jacqueminot* still find a place in lists; the single specimen was a magnificent example of *Comtesse de Chabrillant*. Another noteworthy exhibit was that made in 1875, on the occasion of the Whitsun Exhibition of the Manchester Botanical and Horticultural Society at Old Trafford, where seven railway trucks, laden with specimen Roses and Azaleas, were sent by special train to Manchester by the Great Western Railway. A still greater undertaking occurred in 1882, when a very large exhibition was held in the gardens of the Royal Horticultural Society at South Kensington; on that occasion seventy large specimen Roses were sent from Slough, and two days were occupied in getting them to their destination. Eleven vans and twenty-one horses had to be requisitioned for the purpose. The Slough specimen Roses also won honours at the exhibitions of the Royal Botanic Society at the Crystal Palace and elsewhere.

There are records extant of two memorable specimens of Gater's growth having been exhibited

one was H. P. Elward Morren, shown at Manchester, with 130 large and finely-developed blooms; the other, H. P. Paul Perras, with 300 expanded blossoms.

During the time that Gater had charge of the Slough Roses, the following new varieties were sent out from the Royal Nursery:—John Stuart Mill, The Rev. J. B. M. Camm, Royal Standard, Oxonian, Miss Hassard, Mrs. H. Turner, and the popular Crimson Rambler. The last London Show attended by Gater was that of the Royal Horticultural Society, held in the Temple Gardens, in May last. The success achieved by this worthy rosarian, can be attributed to something like a subtle understanding of the peculiar requirements of the varieties he grew, and his almost unrivalled skill in so timing the plants so as to be at their very best just when required. He was a chief among Rose cultivators, and on not a few occasions, when pitting his strength against other growers, it was his capacity for developing such a superb finish to his plants, which gained for him the premier award. *R. D.*

A ROSE GARDEN.

On p. 267, under ENQUIRY, "Rose" asked some reader of these pages to suggest a design for a Rose garden. The ground was said to take the shape of a horse-shoe, and to be 18 yards wide at the top or narrow end, 25 yards at the bottom, and 30 yards long." It was also requested that beds should be recommended that would be of a shape for pillars and arches. In fig. 88 we reproduce the first suggestion that has come to hand from a correspondent, and do so without expressing an opinion upon its merits. "Rose" omitted to state his case accurately, because a piece of ground 18 yards at top and 25 yards at base could not possibly be the shape of a horse-shoe, the widest portion of which, of course, is a point near the centre. Our correspondent, however, has taken "Rose's" measurements to be literal, and accordingly has a piece of ground like the section of a drinking-glass. The explanations given under the illustration will show how it was suggested the beds should be planted. We have since received another plan from a correspondent, which we hope to reproduce shortly.

HOME CORRESPONDENCE.

LARGE MELON FRUITS.—In August I cut from one Melon plant four fruits of the variety Best-of-All, which together weighed 31 lb. 6 oz. The heaviest was 8 lb. 11 oz., and the lightest 7 lb. 3 oz. *G. Groves, Temple House Gardens, Great Marlow.*

SEEDLING BEGONIAS.—Visiting Chesterfield Gardens, Watham Road, Croydon, the residence of T. Rigby, Esq., recently, I saw a splendid batch of Seedling Begonias with single flowers. They were raised last year, and have been grown in pots this year. The gardener, Mr. Chas. Welstead, by whom they were raised, has been kind enough to enclose three flowers for your inspection. *M. E. Mills, Coombe House Gardens, Croydon.* [Very magnificent flowers. One of them nearly 5 inches across, and of good circular form, has fine petals, with pretty, wavy margins. In colour it is pale yellow, with orange-red staining at the base of two of the segments, and at the apex of the remaining two. The flowers are borne upon good, stout stems. *Ed. J.*]

THE CAPE GOOSEBERRY.—At the meeting of the Royal Horticultural Society at the Drill Hall on October 9, 1900, I entered a small exhibit of Cape Gooseberries. The plants of which they were the produce correspond to *Physalis peruviana*, of Nicholson's *Dictionary of Horticulture*. The flower has a dark spot at the base of each petal division; every flower sets, one at each joint, and is followed by the characteristic fruit of this genus. Its flavour is rich and *sui generis*. This fruit makes one of the best jams known. I grew the plants which produced the fruit exhibited in pots in a greenhouse. I have some also in the open ground, which have made far more vigorous growth than those in pots

under glass, but owing to the lateness of the season, the fruit has not ripened yet. There is no difficulty in growing the Cape Gooseberry in the South of England. It would be interesting if some one would try and cross this *Physalis* with *P. Franchetti*. If the cross succeeded, by selection, a new and valuable fruit might be the result. I obtained the seeds of this *Physalis* from Messrs. Vilmorin, Andrieux et Cie., of Paris, under the name of *Alkekengi doux*. Last year I grew some in the open ground, and from the scattered fruit, this year some plants germinated spontaneously, and made vigorous growth. The inference is that the Cape Gooseberry might easily be naturalised in the South of England. *E. Bonavia, M.D., Worthing.*

CRACKING OF MUSCAT GRAPES.—The fact of "Anxious to Know's" Muscat Grapes cracking in the manner described on p. 275 may be attributed to one or all of the following conditions: 1, An unduly moist and warm, close atmosphere; 2, Imperfect root-action; and 3, Uncongenial nature and condition of the soil forming the border in which the roots are growing, which may be lacking in fertility, or be badly drained. The same remarks apply to the atmosphere of theinery, which may have been kept too hot and too moist, and the

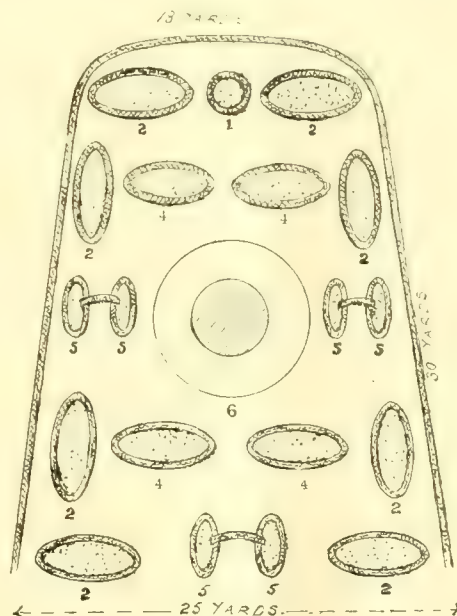


FIG. 88.—SUGGESTED DESIGN FOR A ROSE GARDEN.

- 1, Round bed to be planted with "pillar" Roses.
- 2, H.P. Roses.
- 3, Tea Roses.
- 4, Climbing varieties for arches.
- 5, Half-standard Roses.
- 6, Climbing varieties for arches.

reverse in turns during the period the Grapes were completing the last swelling. If Grapes experience a check in the process of the last swelling through the soil about the roots being allowed to become unduly dry for a short time before applying a liberal application of water at the roots, such mischief complained of would be likely to result. "Anxious to Know" does not say whether the berries had attained to full size or not before they began to crack. *H. W. Ward, Rayleigh.*

CACTUS DAHLIAS.—From a decorative point of view there are none to equal the varieties Magnificent, Britannia, and Night. These bloom with the freedom of Pompons, and are borne on long stems, quite clear of the foliage. They also produce perfect blooms continuously, which a large number of this section fail to do. *W. H. Aggett, Bermondsey, S.E.*

PALMS FLOWERING AT TORQUAY.—Palms which have flowered in the open here this summer include *Corypha australis*, over 20 feet high; *Chamaerops excelsa*, not quite 14½ feet high—both planted twenty-nine years ago; *C. humilis* and *C. Fortunei*, which I take to be synonymous with *Trachycarpus Fortunei* [Yes]. The flowers of *C. excelsa* are magnificent, but they do not ripen seed here. *Corypha australis*, of which I have obtained young plants from seeds ripened here, has flowers of pale lemon colour; they are not nearly so numerous as

the great buttercup-yellow flowers of *Chamaerops excelsa*, which are like imperial crowns, and have a wonderful effect at the latter end of May and in early June. *R. Hamilton Ramsey, Duncan House, Torquay.* [Both *Chamaerops excelsa* and *C. Fortunei* are now referred to the genus *Trachycarpus*. *Ed. J.*]

ORNAMENTAL CRAB JOHN DOWNIE is a most useful variety, of good habit, and very pretty, whether in flower or fruit. The fruits make an excellent jelly, equal in colour to that made from Red Currants. Preserved whole in syrup the flavour is most enjoyable. *R. M., Newbury.*

HARDINESS OF THE SWEET PEA.—It is to be hoped that the interesting and instructive leader on the above subject, which appeared on p. 190, may induce growers to treat these valuable flowers as hardy annuals instead of raising them in heat in the spring for early bloom. In the article referred to, any date between October and June is held as suitable for sowing. In the south-west, September sowings are often made with good results, as in average winters in that locality the plants will pull through with little or no protection, if the growth is not sappy from high feeding: One year, by way of experiment, a sowing was made between two glasshouses in the middle of August. When growth stopped for the year, the Peas had reached a height of 3 feet 6 inches. During the winter the grass thermometer showed 49° of frost, but 65° of frost was the greatest cold experienced. The foliage passed through the winter practically unharmed, and with the mean temperature of April slightly above the average, and no frost registered on the screen thermometer in that month or during May, the Peas came into good bloom in the latter month. Doubtless, in a more severe season, or further north, the experiment would not have proved so satisfactory, but it proves that, under the genial climatic conditions which usually prevail in the south-west, it may be made with a fair hope of successful result. I note that the practice of damping the seeds and rolling them in red lead is considered to be an infallible protection against the ravages of mice. As regards Sweet Pea seeds, I hold the same opinion expressed on p. 190, namely, that mice rarely meddle with these. This I have known to be the case where the plague of mice made it almost impossible to preserve intact rows of edible Peas, in spite of all precautions. Even damping the seeds with petroleum and rolling them in red lead proved no preventive to their destruction. The red husks would be found in the morning lying on the ground minus their contents, and the mice gave no evidence of being harmed by their feast. In the same place they evinced a pronounced predilection for the seeds of Chilies, and every seed-pan not covered with glass was robbed of its contents. After the great Sweet Pea Show and Conference at the Crystal Palace, these lovely flowers will be brought still more before the public. The chief need now is the ability to make a choice selection out of the enormous number catalogued. I am glad to see, from a note on p. 171, that a Classification Committee has been appointed to draw up a list of the three best varieties in each colour section, and shall anxiously await its publication. Perhaps one of the greatest difficulties encountered in compiling a list, is the impossibility of accurately describing the colours of the various flowers. Thus, there are no true blues, though numbers of Sweet Peas are termed blue, and there are no real scarlets. Of the varieties classed as blue, scarlet, and crimson, scarcely two are of the same tint, totally different shades being treated as of the same colour; another difficulty being thereby placed in the way of those who are obliged to make a selection without seeing the flowers. After an inspection of various collections during the past summer, the following twenty varieties, mostly self-tints, appear to be among the best of their respective colours, though having followed the generally accepted colour descriptions, these can only be taken as approximately representing their shades in some cases. White—Sadie Burpee and Emily Henderson; blush—Venus and Hon. F. Bouverie; pale yellow—Queen Victoria; salmon—Lady Penzance; mauve—Countess of Radnor; heliotrope—Fascination; pink—Lovely; rose—Lord Kenyon and Prince of Wales; scarlet—Gorgeous and Salopian; crimson—Mars and Firefly; maroon—Black Knight; purple—Duke of Westminster and Monarch; blue—Lady Grisel Hamilton and Countess Cadogan. *S. W. F., Devon.*

LYCHNIS GRANDIFLORA.—I was glad to read Mr. Jenkins' note on p. 280 regarding this plant, and to hear his opinion of the probable failure or success we may have with it in our gardens. My plant did not come from Messrs. Jackman & Son, but my note upon it appears to have been sent to the *Gardeners' Chronicle*, when the engraving taken from the flower shown by that firm was ready for insertion. I have referred to the figure of *L. coronata* in vol. vii. of the *Botanical Magazine*, and find that the plate is an exact representation of what I flowered this year as *L. grandiflora*, this latter name being given by Curtis as one of its synonyms. The plate is, however, from a flower at a more perfect stage than that figured in the *Gardeners' Chronicle*, there being no apparent gap between the petals, with the result that the blooms

L. alba flore-pleno, better known as *L. vespertina* fl.-pl., and will possibly need to be increased in a similar way, although it produces seed. Curtis tells us that it was introduced to this country by Dr. Fothergill in 1774, and that he saw it in the doctor's garden at Upton. *S. Arnott, Carsethorn-by-Dumfries, N.B.*

EUCALYPTI IN SCOTLAND.—In addition to the buds of *Eucalyptus amygdalina* sent by me last week from the garden of Cromla, Corrie, in Arran, I now send similar corymbs of *E. coccifera* from the garden of my friend, the Rev. John McEwan, Free Church Minister, Roseneath, Dumbartonshire. His manse is opposite to Greenock, and in a direct line only six miles from it. The tree was planted there in 1886, passed through the severe

SWEET PEAS.—I enclose you a photograph of Sweet Peas. They were planted out from pots under hand-lights in March last, and commenced to bloom in May, from which date they have continued to present a mass of flower until the middle of October. I always trench the ground 3 feet deep, and add a liberal dressing of cow-manure and soot at the bottom of the trench. This is especially helpful should the summer prove dry. Early staking is very important for the safety of the roots, and it affords a little protection, too, if a few sprays of Yew are used with them. New sticks, with plenty of twiggly pieces on them, about 8 to 10 feet high, are much the best. The beauty of the Sweet Pea is seen when they are allowed to ramble at will. Before the weather becomes hot and dry, a good mulch of well-decomposed manure



FIG. 89.—PYRUS (SINENSIS =) USSURIENSIS. (SEE P. 300.)

are almost circular. I find that a plate of *L. coronata* is given in Maund's *Botanic Garden*, but the plant there shown is not the same, neither the flower nor the leaves being like those shown in the *Bot. Mag.* The description in the *Dictionary of Gardening* of *L. coronaria* refers to a South European plant, and I take the figure to be that of our old friend *Agrostemma* (now *Lychnis*) *coronaria*, although the *Agrostemmas* are described under that name in the work. Whatever it is, it bears no resemblance to our *L. grandiflora*. The fact of its having been in cultivation but lost is no proof that the plant is tender. Many old plants have been lost from other causes, and there occurs to me at the time the case of the little alpine, *Morisia hypogaea*, which is perfectly hardy, but which was lost to cultivation for years, probably because it had not been widely enough distributed. I am not prepared to say that *L. grandiflora* will withstand all our winters—that we have yet to test. It seems in its growth to be much like

winter of 1894-5 uninjured.* "Bloomed middle of June, 1891, when only 6 feet 7 inches in height, and has continued to bloom every year since." The tree now measures 20½ inches at 4 feet from the ground. It will be noticed that there are only six buds in the corymb, while in that of the *amygdalina* there are a dozen. I send you also a twig of *E. regnans* (Giant Gum), I brought it from Cromla last week; but as it is not in bud, I did not send it then. The tree "was planted in 1892; in autumn of 1894 its height was 10 ft. 5 in." In that winter it was cut to the ground. It is now about the same height as in 1894. It did not suffer much last winter, while a plant of the Red Gum (*E. rostrata*) growing beside it was killed. In Australia it becomes the tallest tree in the world. *David Landsborough, Henderson Manse, Kilmarnock, October 11, 1900.*

* *Australian and other Foreign Trees in Scotland.*—Proceedings of the Botanical Society of Edinburgh, pp. 508-527,uary, 1896.

forms an excellent dressing. To prolong the blooming period, I remove the newly-formed seed-pods daily. Slugs and the sparrows are the principal foes of Sweet Peas; whole rows may be destroyed in a single morning if precaution be not taken against them. *John Butler, Normanton Gardens, Stamford.* [The photograph shows excellent results. We regret we cannot make use of it. Ed.]

STOKESIA CYANEA.—Like the great number of those who have written, I have never seen any but the late blooming form of the plant. One is glad to hear of the early-flowering form, which ought to have some distinctive name, so that those who desire it may get the right plant. I have seen *Stokesia cyanea* grown under glass so as to have it in time for September shows. This was in an early district in Scotland, where plants came earlier into bloom than in many English counties. *S. Arnott.*

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

The following matters have been dealt with during the recess:—

Asparagus diseased.—Specimens badly diseased were received from Mr. G. Croft Harris, Upton-on-Severn, and submitted to Dr. W. G. Smith, who reports as follows:—

"The plant of *Asparagus* received is badly attacked by the *Asparagus rust-fungus* (*Puccinia asparagi*, D.C.). The stems are studded with dark spots, oval in shape, and some as long as one-eighth of an inch. Examination showed the characteristic two called "teliospores," or winter-resting spores, with a thick dark brown coat; the spots seen on the stem are compact patches of these spores. The fungus filaments live inside the tissues of the *Asparagus* plant. The life-history of this *Puccinia* agrees closely with that of *Mint-rust* (*Puccinia menthae*). The young shoots of *Asparagus* in early summer bear tiny cups, from which a form of spore (aeciospore) is given off; later in the season brown spots on the plant give off a second form of spore (uredospore); in late summer or autumn appear the third form in the shape of dark brown patches of teliospores, as in the plant sent. In considering remedy, it is important to bear in mind that these teliospores rest through the winter and next season infect young plants. Operations must therefore be directed towards gathering and burning all the old stems as soon as possible, and before the spores have time to be scattered about. At the same time all weeds or other matter likely to harbour the spores during winter may be gathered and burned. Quicklime may also profitably be dug into the upper soil in as large a quantity as may be considered safe for the crop; and while the plants are dormant, spraying with diluted Bordeaux Mixture has been fairly successful as a check to the rust, but the delicate nature of *Asparagus* foliage makes this risky, and further experiments are required."

Asters diseased.—Examples were sent by Mrs. E. Daw of Nymett House, Nymett Rowland, Lapford, North Devon, observing that "the whole bed looked in splendid condition, but one after another nearly every plant went off, and in only a very few hours seemed quite withered and dead. Another garden in this neighbourhood has suffered in the same way, and French Marigolds have also been similarly attacked." They appeared to be attacked by a worm described by Mr. Hilderic Friend (*Gardeners' Chronicle*, August 14, 1897).

Willows Attacked by Aphids.—Rev. H.C. Brewster of South Kelsey, Lincoln, sent specimens of Willow shoots infested with aphids. He observes that the Willow trees swarm with wasps. Mr. McLachlan reports that the insects on the Willows were a large species of aphid known as *Lachnus viminalis*. They secrete quantities of "sugar," which attracts innumerable wasps. It has actually been suggested in former times that this "sugar" might be utilised when the real article is scarce.

Oak leaves with Spots.—Some leaves, extraordinarily and thickly covered with spangles, were sent by Mr. Winkworth of Houghton Hall, Tarporley. Mr. McLachlan observes that nothing can be done, but tomits devour them. They are not likely to cause any permanent injury. Pheasants are said to be fond of them.

Cystopteris bulbifera.—Specimens of the curious bud-like structures from the tips of the fronds of this Fern were sent by Mrs. W. Floyer of 4, Richmond Road, Basingstoke. They consist of two or three unequal-sized thick and fleshy scales; the cells are green, but contain immense quantities of starch.

DEVON AND EXETER GARDENERS'.

OCTOBER 12.—The annual meeting was held on the 12th inst. in the Guildhall, Exeter.

The committee's report stated that the essays and lectures given, and the general work of the Association were all in strict keeping with the furtherance of practical and scientific gardening in its modern phases. Mr. Mackay reported that the balance in hand from the previous year was £16 11s. 9d., the number of members 64, and the balance in hand at the end of the year £21 13s. It was resolved that Mr. E. A. Sanders be re-elected president. Mr. Mackay moved that the following be the vice-presidents for the ensuing year:—The Mayor, the Sheriff, Major Tracey, Messrs. Imbert-Perry, G. D. Cann, P. C. M. Veitch, J. Dallas, C. T. K. Roberts, R. G. Abraham, W. Lethbridge, and W. B. Heberden, C.B. Messrs. Hope and Mackay were unanimously re-elected hon. secretary and hon. treasurer respectively.

BECKENHAM HORTICULTURAL.

OCTOBER 12.—On the above date, Mr. D. Harris, gr. to Col. JERYLL, Munstead House, Godalming, read a paper upon "The Formation and Arrangement of a Hardy Flower Border."

A border in front of a south or south-west wall was recommended. A border 15 feet wide was desirable, so that the arrangement might be made effective. If pieces of sandstone were placed along the front, they would afford suitable positions for trailing and spreading plants. Repetition of groups at regular intervals should be carefully avoided. Such perennials as *Helianthus* and *Harpalum* require to be lifted annually, and all roots carefully removed, replanting small

pieces. *Delphiniums*, *Anemone japonica*, and others are best left undisturbed for years. Ordinary bulbs were not recommended for the hardy flower border.

An imposing display of double and single flowered *Begonias* was sent by Messrs. J. PIER & SONS, Roupell Park Nurseries, South Norwood; also a tastefully-arranged basket of *Roses*, and some of the newer varieties of *Cactus Dahlias*, by Mr. Trowell, gr. to D. LIND, Esq., "Fairlight."

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 12.—*Meeting of Committee after Present:* Messrs. Shorland Ball, chairman; W. Duckworth, G. W. Law-Schofield, R. Ashworth, W. Stevens, J. Robson, J. Cypher, and P. Weathers, Hon. Sec.

O. O. WIGGLEY, Esq., Bridge Hall, Bury (gr., Mr. Rogers), exhibited a beautiful variety of *Cypripedium* × *triumphans*, previously described in these columns, when it received a First-class Certificate at Manchester. *Cypripedium* Charlesworthi var. *pallidum* came from the same exhibitor, and is a fine bold flower, with somewhat pale-coloured dorsal sepal.

HERBERT PARKINGTON, Esq., Glossop (gr., Mr. Campbell), was awarded a Cultural Certificate for three well-grown plants of *Laelia pumila*.

W. THOMSON, Esq., Stone (gr., Mr. Stevens), exhibited a fine plant of *Oncidium incurvum album*, which had a spike of flowers nearly 5 feet long, and the flowers were white; the Committee gave an Award of Merit and a Cultural Certificate. An Award of Merit was also voted to a pretty form of *Odontoglossum tripudians*.

J. LEEMAN, Esq., Heaton Mersey (gr., Mr. Edge), staged a very good group, one of his best plants being a fine variety of *Vanda Sanderiana*, well formed and richly coloured. *Cattleya* × *Mantini* var. *nobilior*, from the same exhibitor, received a First-class Certificate. It is a fine variety, very rich in colour, and well shaped, showing a good deal of the aurea parent in the lip. *Cypripedium insigne* var. *Emily Leemann*, much in the way of C. I. var. "Dorothy," received an Award of Merit (Silver-gilt Medal for group).

Mr. JAMES CYLLER, Cheltenham, exhibited a delightful plant in *Dendrobium Phalaenopsis* var. *hololeuca*. This plant was not fully in flower, only three out of eight blooms being expanded. A peculiarity of the flower is that when opening it shows a slight rosy tint at the spur of the flower, this gradually disappears as the flower grows older (First-class Certificate).

Dr. HODGKINSON sent a beautiful form of *Sophranites grandiflora* var. *rosea*, a rather large form, the flower being nearly 3 inches across (Award of Merit).

GHEENT.

The monthly meeting, organised by the *Chambre syndicale des Horticulteurs belges*, and the *Société royale d'Agriculture et de Botanique de Gand*, was held on Sunday last, when the following awards were made:—

Certificates of Merit to *Draecena Standaerti*, presented by M. P. Standaert; *Agave attenuata*, shown by M. E. Bedinghaus; *Cattleya Hardyana*, exhibited by M. Maurice Verdonek; *Cattleya Hardyana* Mme. Maurice Verdonek, from the same exhibitor; *Cattleya Harrisoniae* var. "Prince Albertus van Belgie," from M. L. P. De Lange-Vervaeke; *Laelia praestans* var. *annua*, and *Laelia praestans* var. *from Le Marquis de Wavrin*; *Miltonia Moreliana* Vincke, shown by M. G. Vincke-Dujardin; *Stenoglossis longifolia* var. *albans*, exhibited by M. le Marquis de Wavrin; *Cattleya Bowringiana*, Wild's variety, from Le Marquis de Wavrin, together with *Cattleya Hardyana* var. *ilacina*; *Cattleya Harrisoniae* var. *from M. G. Vincke*; *Cattleya Prince Albert* (C. Loddigesii × C. Trianae); *Dendrobium Phalaenopsis* "Princesse Albert de Belgique," *Cattleya labiata* "Princesse Clémentine," *Laelia praestans grandiflora*, *Cattleya Schilleriana superba*, *Cattleya Lafontaine* (C. Mendeli × C. guttata), the last seven exhibited by M. Vincke-Dujardin; *Laelia praestans* var. *bella*, from the Horticulteur Coloniale; cut flowers of new varieties of *Cactus Dahlias*, from M. A. Gallet; cut flowers of *Ceanothus*, in twelve varieties, from M. C. Kerkvoorde; cut flowers of *Gloxinia*, presented by M. le Comte Oswald de Kerchove de Denterghem.

CULTURAL CERTIFICATE.

Echinocactus Grusoni, presented by M. E. Bedinghaus.

CERTIFICATE FOR NOVELTY.

Anthurium Schetzerianum (Aurore boreale), shown by M. Louis de Smet.

HONOURABLE MENTION FOR FLOWERING.

To *Burlingtonia candida*, grown by Mr. Maurice Verdonek.

HONOURABLE MENTION.

For a collection of cut flowers of *Cannas*, new varieties, presented by M. A. Gallet.

ANSWERS TO CORRESPONDENTS.

BOOKS: A. O'N. The best work for your purpose would be *Fruit Farming for Profit*, by George Bunyard, and published by Fred Bunyard, 29, Week Street, Maidstone. We know of no book that deals with the subject from the economic standpoint, and excludes all cultural information.

CRASSULA: *Constant Reader*. Without knowing all the circumstances, we can only guess that your plants have been watered too much, or at unsuitable times.

CYPRIPEDIUM CHARLESWORTH: E. A. R. The flower is very curious; we will report on it next week, but we are quite unable to give the reason why.

CYTISUS ANDREANUS: L. B. You may sow seeds at once, but as this plant is only a variety of *C. Scoparius*, the seedlings may not all prove to be true *Andreanus*, though a large proportion will be true. You may propagate the variety by layers, or by grafting it upon stocks of the common Broom, or upon species of *Laburnum*.

EUCHARIS GRANDIFLORA: R. J. F. The specimens sent though small seem perfectly healthy. Your experience is like that of many others who have failed to find a suitable place to grow their *Eucharis* plants in. They break up continually into a number of small bulbs, instead of making large flowering ones. We should advise you to obtain a fresh stock of large flowering bulbs, and to try them after potting on a gentle bottom-heat, or you may proceed in the same way with the best of your own bulbs.—R. B. Some of the bulbs you send are quite sound, and others are badly infested with the bulb-mite. We are not able to say positively what is the cause of the mite attacking the bulbs, but we should be disposed to regard them as an "effect" rather than a "cause." These mites may be found in all kinds of bulbs providing they have partially decayed from any reason, but so long as *Eucharis* or other bulbs are maintained in a sound condition, by suitable cultivation they appear to be proof against the mite. As your bulbs are not all affected, you had better turn them out, and select the sound ones for repotting. The best thing to do with the others is to burn them. We cannot describe the details of *Eucharis* cultivation in this column, and must refer you to the article upon this subject which appeared in the *Gardeners' Chronicle*, September 23, 1899. We may say this much, however, that *Eucharis* plants should never be quite dried off at the roots, but be kept growing gently throughout the year, only resting in the winter to the degree *Pancratium* and other stove-plants rest. Many good collections of *Eucharis* have been ruined by forcing them to bloom at Easter, then resting them severely, and forcing them again into bloom at Christmas. Never water them very freely if from any reason the temperature in the house is lower than usual.

FERNS FOR EXHIBITION: *Monmouth*. There is no absolute rule in such matters, and not knowing who may have to judge the class, it is impossible to say what varieties of Ferns that judge may personally consider to be most choice. However, from the list you send us, we should be disposed to exhibit in a class for four stove and greenhouse Ferns, *Adiantum gracillimum*, *Davallia canariensis*, *Nephrolepis pectinata*, and *Pteris cristata variegata*. The reason we select but one *Adiantum* is, that in such classes the specimens shown should be as distinct from each other as possible.

FRENCH BEANS: N. N. C. If you have made no preparations for growing a Cucumber or Tomato crop in the houses, the French Beans may pay you as well as any other crop that could be cultivated during the winter. The Beans, however, could be grown very well in less useful structures, such as heated frames, where the plants, growing in rows, with their heads close to the roof-glass, would obtain all the conditions they require.

FUNGUS: *Saffron Walden*. The Agaric found in the hollow of a Birch, is called *Volvaria bombycinus*, which sometimes attains a very large size. The spores are salmon-coloured, and not black as in *Coprinus*. Nearly all the species with salmon or pink spores are suspicious, although this species is said to have been eaten. We have never tried it, and do not feel inclined to do so.

GRAPE: H. B. The Grapes you send are the variety known as *Alnwick Seedling*, but we are surprised you should have failed to obtain good crops of fruit from the Vine. It is a strong growing variety, and needs no special cultivation to succeed, unless it be in "setting" the flowers. You omit to say whether the Vine has flowered

well or not, and the flowers having failed to "set," because the ovaries were not perfectly fertilised, there has been no crop. Whether this be the case or not, when the Vine is in flower on a future occasion, endeavour to pollinate them with pollen from another variety that happens to be in bloom at the same time. You may do this by first passing a camel-hair brush or "pencil" over some flowers of the strange variety, and then over some of those of Alnwick Seedling, repeating the operation until you think fertilisation has been effected.

GRUB: *F. S. & Co.* It had escaped; at any rate, we could not find it.

HOW TO LAY OUT A GARDEN: By Kemp. Mr. Wyke, 1, Hanson Terr., Garden Lane, Chester, has a copy of this now scarce work to dispose of.

LAWN GRASS: *J. L.* It is more than probable that the unsatisfactory patches on your newly-made lawn are on sites where trees have formerly stood, and which have been cut down a little below the ground-level. In cases such as this, the effect of the impoverished condition of the soil for a few yards around is evident in almost any crop that may follow, and if that crop be lawn-grass, such spots may show themselves for several years. It is to this cause, rather than the suggested fungus, that we attribute the condition of which you complain. Your remedy will be to give the poor patches an occasional sprinkling with a good lawn-grass manure, usually described as "Sands." The general thinness of the grass is probably due in some measure to the unsatisfactory aspect of the site. You would do well to give the whole of the grass a surface-dressing of wood-ashes, which should first be passed through a rather fine sieve. This dressing may be 1 inch or so deep, and should be applied at once. In early spring a stimulant may be given, and if more frequent applications be afforded to the unsatisfactory patches during next summer, the lawn may become good and even over its whole surface.

MARGUERITES: *E. O.* The grubs in the leaves of your Marguerites are the maggots or mining larvæ of a fly, *Phytomyza nigricornis*. It will be best to remove those leaves which are worst disfigured, the maggots in the other leaves may be crushed between the thumb and finger. Spray your plants occasionally with a solution of Quassia, which will make them less tasteful to the female *Phytomyza* that lays her eggs upon the leaves.

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can consistently with our editorial work, but as the naming entails much labour and considerable cost, we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is often unavoidable.

F. B. 1, Red Doyenné; 2, Surpasse Virgoulieu; 3, Retour de Rome; 4, not recognised; 5, a small example of Brown Beurri; 6, Autumn Bergamot. — *J. S.* 1, Worcester Pearmain; 2, a small fruit of Rambour Franc; 3, Louise Bonne of Jersey; the Plum was over-ripe and not recognisable. — *T. H.* 1, Winter Greening; 2, Hambleton Deux Ans; 3, Wyken Pippin; 4, Court Pendu Plat; 5, Lord Suffield; 6, Lord Grosvenor. They are all good varieties, and if they succeed with you, by all means preserve them. — *J. B. S.* 1, Margil; 2 and 4, specimens too imperfect; 3, Seckle; 5, Scarlet Pearmain; 6, Scarlet Nonpareil. — *H. E.* 1, Gansel's Bergamot; 2 and 3, rotten; 4, Cellini; 5, Ribston Pippin. — *L. S. T.* 1, August de Boulogne; 2, Compagrette; 3, Duchesse d'Orleans; 4, not recognised; 5, Greening's Pippin; 6, Hawthornden. — *T. W.* 1, Marble Pippin; 2, Dr. Harvey; 3, Cockle's Pippin; 4, Flower of Kent; 5, not recognised. — *D. G. P.* 1, Carlisle Codlin; 2, Potts Seedling. The others are probably local varieties, and none of the specimens was in good condition for naming. — *J. C. E.* 1, Hambleton Deux Ans; 2, Dutch Mignonne; 3, Shepherd's Fame; 4, Lincolnshire Holland Pippin. — *J. H.* You have not complied with the conditions given above. 1, Red Ingestre; 2, Flanders Pippin; 3, Scarlet Pearmain; Pear, Adèle de St. Denis. — *H. W.* 1, Gogar Pippin; 2, Rhode

Island Greening; 3, Sheep's Nose; 4, not received; 5, Dunmore. — *M. A. C.* The numbers were not securely affixed to the fruits, and had become displaced in transit. Perhaps you can determine them from the following indication. The large fruit is Beauty of Kent, the small red one is Duchess' Favourite, the green fruit is Schoolmaster. — *A. C. H., Essex.* 1, Bois Napoleon; 2, Vicar of Winkfield; 3, British Queen; 4, Doctor Lentier; 7, Aston Town; 8, Madame Henri Desportes. — *Old Subscriber.* Why did you not send name and address? 1, Winter Majetin; 2, Althorp Crassane; 3, Maréchal Dillen; 4, not known; 5, Colmar; 6, Louis Grégoire. — *W. P., Hamworth.* The Pears should have been sent earlier, they were over-ripe. 1, White Doyenné; 2, Amelie Leclerc; 3, Violette. — *Amateur.* 61, Leopold Riche; 71, Beurri Six; 13 and 85 appear to be identical as you suggest, and both specimens resemble Dr. Andry; 84, Comte de Flandre. — *W. V.* Your Plum is the Belvoir Plum, which is one of the latest keeping varieties known to us, and usually of fair quality. — *F. R.* 1, Cellini; 2, Alfriston; 3, Lord Derby; the others are not recognisable. — *R. P.* 1, Hélène Grégoire; 2, Reine des Poires; 3, Doyenné Depays; 4, Dorothee Royale Nouvelle; 5, Hanwell Souring. — *G. R.* Millot de Nancy; this Pear has been found satisfactory in some parts of Sussex. — *C. B.* We believe your Apple is the old English Pearmain, which is one of the oldest Apples in cultivation. The name has been supposed to be derived from *Pyrus magnus*. — *G. M. Ted.* 1, Gendebien; 2, Duchesse de Brabant; 3, Hébé; 4, Délices d'Hardenpoint; 5, Calville Rouge d'Hiver; 6, Winter Greening. — *W. H., Workop.* 1, Doyenné Sieulle; 2, Théodore Van Mons. — *H. R.* 1, Soldat Laboureur; 2, Emerald; 3, Besi Esperen. — *H. G.* 1, Yorkshire Greening; 2, Mère de Ménage. — *F. B.* Reinette Grise. — *J. M.* 1, rotten; 2, Lord Suffield; 3, Calville Rouge de Micoud; 4, Hawthornden; 5, Breedon Pippin; 6, Scarlet Nonpareil. We are quite willing to help you with the other fruits if you send them in good condition. — *Doubtful.* A, Dunmore; B, Golden Queen. — *T. W.* A thin cardboard box is not strong enough for the conveyance of heavy fruits, however carefully packed; and your specimens suffered greatly in transit, the Apple was the only fruit uninjured. 1, Gloria Mundi; 4, Princess Charlotte; 5, Beurri d'Aremberg. — *Mrs A.* Your specimens are under examination, but they have not been determined at present. Possibly it is a seedling or local variety, but we will compare them with other samples, and advise you again next week.

FRUITS WITHOUT NAME OF SENDER. We have received a square box of fruits without the name of the sender, the individual specimens being in paper bags. The reply will be reserved until our correspondent communicates his name and address. Answers will be given under any pseudonym that a sender desires.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number. — *W. H.* 1, Odontoglossum grande; 2, Odontoglossum crispum; 3, Miltonia caudata; the fourth is a form of *Cattleya labiata*, but being very much withered, it is impossible to say which. — *T. W. R., Westonbirt.* 1, *Cratægus coccinea* var. *indentata*; 2, 3, 4, 5, 6, *C. coccinea*; 7, *C. rotundifolia*. — *Dunmore.* Odontoglossum Lindleyanum. — *C. E. B.* *Cobæa scandens* will not resist a severe winter. — *A. C.* 1 to 6 not found; 7, *Athrotaxis selaginoides*; 8, *Juniperus sinensis*; 9, *Cephalotaxus drupacea*; 10, *Retinospora plumosa* of gardens; 11, *Cupressus Lawsoniana variegata*; 12, *Cupressus torulosa*. — *H. M. V.* *Cosmos bipinnatifida* allied to the Dahlia. — *J. E. H.* 1, *Selaginella caesia*; 2, *Selaginella caulescens*; 3, *Selaginella denticulata*; 4, *Begonia Rex* variety; 5, *Dracana ferrea*; 6, *Begonia parviflora*. — *J. B.* 1, *Ruellia Portellæ*; 2, *Carex variegata*; 3, A grass we cannot name; 4, *Salvia splendens*; 5, *Sedum Sieboldi*; 6, *Nephrolepis exaltata*; 7, *Ophiopogon jaburan variegata*. — *Rus in urbe.* *Cratægus coccinea*. — *W. L.* 1, *Capitatum* (*Pelargonium*, scented), strong, probably from a planted-out specimen; 2, Mrs. Douglas; 3, *tomentosum*; 4, Same as No. 1, but with less vigour, and probably grown in a pot; 5, *Radula*; 6, *crispum majus*.

PLANTING UNDER TREES: *C. P.* Among the plants you have used we do not notice *Rhododendrons*

mentioned. The common varieties are capital plants to succeed in such a position, and may prove more satisfactory than the Laurels, Aucubas, *Viburnums* (*Laurustinus*), and Privet, that you are now removing. You must not expect the *Rhododendrons* to bloom much, but they will always be green. To face the drive where the shade is not so dense, you can hardly do better than plant Aucubas and variegated Privets among the green-leaved plants already described.

PYRUS: *J. J. F.* Your Pear is the Sand Pear of Japan and China, of which there seem to be many varieties. The species is *P. sinensis*, sometimes also called *P. ussuriensis*. In addition to the figure at p. 298, another variety was illustrated in our columns January 23, 1875, p. 107.

RADISH: *H. N. N. C.* The best varieties for your purpose are White Olive-shaped, Deep Scarlet Olive-shaped, and Forcing White Olive-shaped. The two first-mentioned varieties were shown at a meeting of the Royal Horticultural Society on April 21, 1897, by Messrs. Vilmorin, Andrieux & Co., Paris, and they were both awarded First-class Certificates. They have very short tuft-like foliage, and may thus be cultivated very closely together, which is a great advantage when the crop is grown indoors. We do not know whether you can obtain seeds in England, but we should think so. The third variety was exhibited in 1898 by Messrs. Sutton, of Reading; and Messrs. Barr, King Street, Covent Garden. It is said to mature more quickly than any other white-fleshed Radish, and may be thoroughly recommended for your purpose.

RIVER BANKS: *J. M.* We would suggest Willows, also the common Reed, *Arundo phragmites*, and *Lycium sinense*.

SCAB IN POTATOS: *J. S.* A very bad case. Do not use the sets for planting next spring. The Americans recommend washing the tubers with a weak solution of corrosive sublimate; but that is too dangerous for us to recommend.

SPRING BEDDING: *Gardener.* *Alyssum saxatile* and *Arabis alpina* are very frequently used in spring bedding, and occasionally as a ground or carpet below taller-growing plants. You may use them in this way for the Tulips as you suggest, and they will flower about the same time as the Tulips. We should scarcely have recommended a groundwork at all for Tulips, as they produce so much broad, green foliage. It will oblige you to plant your Tulips thinly. *Aubrietias* would certainly bloom as early as the late-flowering Tulips.

VINES: *Geo. Colman.* It is not likely that the young Vines will suffer injury from cold, although your houses are unheated. The Grape-vine during winter is capable of resisting a very considerable degree of frost. At the same time, if the weather should be unexpectedly severe, you might throw a few mats over the young canes, if they can be laid down horizontally.

WIREWORM: *Geo. Colman.* We should prefer to throw out the soil and obtain fresh for the Tomatos; or if this be impossible, you might sterilise the soil by baking it over the stovehold boiler, and thus kill all insect-life it contains. Less trouble would be caused if you could put out the soil in a moderately shallow layer, and saturate it with boiling water; but it would not be nearly so effective a remedy, and we are afraid the worms would successfully resist heat unless it be of great degree. You had better not use gas lime under the circumstances, and ordinary slaked lime, though very useful in moderate quantities, is not sufficiently virulent to kill wireworms.

COMMUNICATIONS RECEIVED. — *J. H. & S.*: We cannot print what has already been published in such a manner. — *H. Arnold*: Your fruits were named in our last issue on p. 284, col. ii, under "H. A." — *W. J. B.* — *E. J.* — *T. D. F.* — *L. B. H. W. W.* — *F. Moore* — *Rev. Geo. H.* — *R. F. B.* — *Experience*. — *Pen.* — *G. W.* — *L. S.* — *Edgar*. — *A. F. T.* — *W. H. R.* — *W. P.* — *J. E. P.* — *J. H. A.* — *W. H. S.* — *T. F.* — *Moamouth*. — *J. M.* — *H. T. M.* — *J. H. Haarlem*. — *S. A.* — *J. S.* (a similar reply is published in this issue). — *A. P.* — *A. B.* — *M. L. M.* — *W. P.* (will make enquiry). — *L. Maurer* — *A. B. M.* — *C. H. W.* — *F. W. B.* — *E. M.* — *Isch.* — *A. Derry*. — *Love-apple*. — *C. M.* — *S. E.* — *A. P. W.* — *Magdeburg*. — *Justus Corderoy*. — *H. D. W.* — *A. J. R.* — *Comber*. — *R. S.* — *Hants*. — *J. M.* — *Arthur Neville*. — *W. Silver*. — *A. B.* — *T. W. R.* — *Westonbirt*, &c.

PHOTOGRAPHS RECEIVED. — *W. P.* — *W. W.* — *J. H.* — *Haarlem*. — *G. C. A. B.* — *Everard im Thurn*.

(For Markets and Weather, see p. x.)



W. H. S.

TOPIARY WORK AT FRIAR PARK, HENLEY.



THE

Gardeners' Chronicle

No. 722.—SATURDAY, OCT. 27, 1900.

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"THE FRUIT GARDENER."

THIS is a little-mentioned work, devoted to fruit-growing in Scotland, which was published anonymously by Nourse of London in 1768. It is remarkable as being the best work written by its author, of the identity of whom there has been some doubt—Watt, in 1824, placing the book doubtfully to the credit of John Gibson, a surgeon in the Navy; and other authorities have followed Watt, or else have given Gibson his due. At the expenditure of some little trouble, and with the aid of one or two kind librarians, I have been able to determine definitely the authorship of *The Fruit Gardener*, and finally in this way. In the work in question, *The Theory of Agriculture* is twice referred to as a book shortly to be published by the same author, but no trace of such a work is to be found, and it was only by wading through other books of Gibson's that a clue was found in one dated 1772, in which *The Theory of Agriculture* is mentioned in the text, and there and in the preface it is called also *The Survey of Nature*, which he says "was written some time ago, though not yet published, except a small sketch of it in 1760, with the title of *An Essay on the Theory of Agriculture*, since which time it has undergone many alterations, &c." Gibson is not named in

Biographical Dictionary, and the latest note I have been able to find of him occurs in a small treatise on *Bilious Complaints*, published in 1799, from which it would appear he was then practising in London, and previously had been attached to Lord Rodney's fleet as surgeon.

His published writings bear evidence of the author having been possessed of a mind with a strong bias towards natural philosophy, and *The Fruit Gardener* shows that he must have studied to some extent practical gardening during the periods he spent on shore while off duty. He was well read in the chief writers on gardening by whom he was preceded, but with the exception of "Le Gendre" and Quintiney, his opinion of their respective capacities was not an exalted one. His contemporary, Dr. John Hill, who had exploited the public with expensive books, was in especial his *bête noire*. Of his countryman James Justice, he remarked that he was less qualified to treat of fruit-culture than of the subject of which he had lately been one of the leading exponents—floriculture. Hill's improved method of training wall-trees were in Gibson's opinion counterbalanced by certain disadvantages, and all the other authorities of his time laboured under their peculiar shortcomings, else what would have been the utility of his publication? This kind of sentiment was unfortunately a feature of the times, and we must not, therefore, too hardly judge our author because he was no better than his compeers.

His book, indeed, affords another testimony of the vigour with which gardening was pursued in the eighteenth century, as well as of the generally correct views promulgated by horticultural writers of the period. He, for instance, preferred budding to grafting, as applied to Pears and Apples, though he thought double-working Pears to have been of no benefit, save to the nurseryman, who charged an extra price for these trees. The disadvantages of fastening the shoots of trees to walls by means of nails were clearly seen, and he recommended as preferable a system of wiring the walls, the wires to be placed perpendicularly. He also noted the drawbacks of espaliers, and recommended instead the culture of dwarf Apples trained in bush form. The incomparable beauty of Apples and other hardy fruit, when employed as decorative flowering trees, he fully recognised, and strongly recommended planting them in pleasure gardens on that account alone, and he thought the value of early planting was fully proved by the young roots which were protruded during the season of rest by trees treated in the above manner.

While discussing the various kinds of walls that were found in gardens, we receive the interesting information that "walls raised of stone and 'fail,' placed in alternate layers," were often met with "in Scotland." "Fail," it may be necessary to explain, is synonymous with turf. Gibson's own preference lay in the direction of a stone and lime wall, as being warmer than brick; and walls of the last-named material, he thought, should be fitted with copes projecting 4 to 8 inches outwards. In training, he considered the horizontal method of disposing all branches as one to be preferred in every case. Superfluous shoots are advised to be rigorously suppressed or removed, and where other means to induce fruitfulness have failed, then the tree should be lifted out of the ground, the roots pruned, and immediately replanted thereafter. Answering fully as well is a semi-circular trench, taken out at a proper distance from the tree, the roots that cross the trench cut,

taken out, and the trench refilled with soil. The borders occupied by fruit-tree roots were to lie constantly in fallow, the hoe was to be kept regularly at work during the summer months, and the spade used twice a year to loosen the soil overlying the roots.

The most interesting portion of the book, which is by no means a small one, is that devoted to the treatment of the various kinds of fruit suited to the climate of Scotland. Among these, Grapes occupy the first place; the Sweet-water and the Cluster-Currant being the sorts recommended for wall-culture. Our author acknowledges the value of glass frames erected in front of walls as a means of increasing the size of the Grapes, and at the same time improving their appearance; but he thought they would "neither have the taste nor flavour of the same kind that are produced and ripened in the open air." Only seven sorts of Peaches are recommended, and of these, the Newington and Admirable, with the caution that they cannot be depended on to ripen; while Peaches generally ought to find a place only in gardens the most happily located. Nectarines also are recommended, but doubtfully; Elruge, Red Roman, and Newington the sorts named as suitable to the climate. In his experiments he tried cultivating Apricots in standard form, but naturally found them to fail. He recommended the shoots of young Apricots to be allowed abundant space when nailing to walls, and selected The Early and Brussels as the best sorts. Sixteen Plums are named, but of these the Green Gage appears under a synonym. The earliest sort in 1761 and 1762 was Jean Hâtive, the fruit of which ripened early in August, or nearly as early as we can now secure Early Prolific off a wall. Other varieties named, and still cultivated, are Orleans and White and Red Magnum Bonum.

In addition to these garden Plums, several kinds were grown in hedge-rows, "Damas-cenes" being among these, and "Horse-jags" (*Prunus insititia*?). Of Cherries only eight kinds are named; and Morellos were then, as now, trained to north walls. As standards in the open the trees bore "poorly," but the fruit improved in flavour. "Geens" have a chapter to themselves.

Pears and Apples, then as now, were the chief fruits grown in Scottish gardens. Of both, descriptive lists are supplied, "and the descriptions taken directly from the ripe fruit." The dates of ripening of each is also given. No fewer than eighty-four varieties of Pears are thus named, and twenty sorts of Apples, and a number of these by name only. Among the latter are the Sugar-loaf Stoupleadington, two sorts of "Cour-pendu," Carse of Gowrie, Fullwood, Ozlon, Grey Leadington (a highly commended sort, though I have not found it of any value), and the inevitable Golden Pippin.

The list of Pears is very interesting, so many of the varieties bearing Scottish names, while the description of each, with date of ripening, supplies us with a fair idea of how they fared with this delicious hardy fruit. The earliest kind was Pear James, a very small red fruit of no great value beyond its earliness; in the last-named quality being almost equalled by the Crawford, which our author considered identical with the Summer Blanquet. Ladies' Lemon (Lady Lamont); Sauch, the most profitable for orchard culture; Scots' Cornuck (Carnock), Early Achan, and Achan, still largely grown; Keather, Elshin-haft, Swan's Egg, Muirfowl Egg, Brier-bush, Golden Knob, and Forrow-Cow, are all, perhaps, of Scottish origin.

In the chapter "Of Fig Trees," it is remarked that he had frequently seen them in Scotland grown both on walls and in cases, but that he had never seen ripe fruit—rather a doubtful assertion when taken in conjunction with another, that he had seen Mulberries ripen as standards. Among Gooseberries we come across the familiar name of "Green Gaskins" (Gascoigne), long a favourite in Scotch gardens.

The whole book bears evidence that its author was no novice in this branch of horticulture, and one would imagine from a request made in the last chapter that cultivators would send him ripe specimens of Pears for examination, and ultimately for figuring in a more pretentious work he hoped to publish later, that his identity could not have been concealed from his contemporaries. But he seems to have been unlucky in his literary ventures, else we might have had along with the shadowy *Theory* an interesting presentment of the Pears and Apples cultivated in old Scottish gardens, R. P. Brotherston.

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM INSIGNE SANDERÆ (HOME RAISED).

In the *Gardeners' Chronicle*, January 16, 1897, p. 37, we illustrated a fine form of *Cypripedium Lawrenceanum* Hyeaunum, raised from true seeds by Norman C. Cookson, Esq., Oakwood, Wylam (gr., Mr. Wm. Murray), and remarked on his success in raising this and other varieties of *Cypripedium*, exhibiting colour suppression after the manner of "albinos." A step in the same direction has been made by Mr. H. J. Chapman, gr. to R. I. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell, where one of a small batch of *Cypripedium insigne* Sanderæ, raised from seeds obtained by fertilising the ovary with its own pollen, is in bloom. The first one to flower is identical with the parent, and that is worthy of remark, for the fine form and clear yellow and white of *C. insigne* Sanderæ places it as the best of the yellow insignes. There are now a number of varieties of this section, some of them very inferior in form from a florist's estimate; and seeing that seedlings are apt to vary considerably, it would not have been surprising if this had failed in some of the fine qualities of the parent. But in the case of Mr. Cookson's *C. Lawrenceanum* Hyeaunum, there was a decided improvement on the original; and in this instance from Mr. Measures, when the plants get stronger, improvement rather than deterioration may be shown, which fact should give additional inducements to Orchid raisers to follow this interesting occupation, raising true as many of the fine varieties of imported species as possible.

FOREIGN CORRESPONDENCE.

BRUSSELS.

THERE is plenty to see in Brussels! and the great square, with the town hall, is a sight to excite the languid pulse of the most blasé traveller. But for the horticulturist there are other things as wonderful in their way as the architectural marvels just alluded to. The "Horticoles Colonial" is about as perfect an establishment in its way as can well be. Time after time it has been mentioned in these columns, so that there is little to add concerning it. Moreover, the end of September is not a show time for Orchids, so far as flower is concerned, but the astonishing uniformity and excellence of cultivation are perhaps even more manifest now than when the attention is distracted by the gaudy efflorescence of *Cattleyas*, *Lælias*, or the profuse blossoming of *Odontoglossums*. In a commercial establishment one does not look for specimen

plants, but nothing is more striking here than the countless thousands of *Odontoglossums*, *Cattleyas*, and other Orchids of uniform size and vigorous health, many forming large firm sheaths, and indicating in the case of the *Cattleyas* the formation of four to five flowers to a raceme.

The cause or causes of the splendid health of the plants are not difficult to discover. First of all, because it is specially under the control of the cultivator—is spotless cleanliness of plant, stage, pot, path, and glass. This absolute cleanliness reigns

you will become conscious of a thorough circulation of air, without draughts, and of course without stagnant moisture. Light is abundantly secured by the construction of the houses. Each plant is raised on an inverted pot bearing a saucer of water, which supplies moisture and secures the plant against the attacks of marauders, while the plant itself is slightly raised above the water. As to the details of general cultivation, they do not apparently differ materially from what is practised elsewhere.



FIG. 90.—DICHORISANDRA THYRSIFLORA. (SEE P. 303.)

not only here and there, or in the case of particular plants, it is general throughout the establishment, in those departments which come under the public eye, and also in those which the public does not see. As the establishment is vast, the amount of labour bestowed can be imagined. Then the foremen and principal cultivators have, many of them, been with M. Linden for a quarter of a century, and their personal interest in the plants is as great as that of the Director himself. Next to cleanliness, we should be disposed to name ventilation as one of the principal factors in the successful cultivation of the Orchids. Look under the stages, and

The Park Leopold, in the immediate vicinity of which the nursery is situated, is on the outskirts of Brussels. The city is rapidly extending, and in no long time houses will encircle it on all sides, and the purity of the air will become correspondingly impaired. To meet this contingency, another nursery has been formed at Moortebeke, a short way out of the city in an open situation, but rather too close to brick-fields to be an ideal site. Nevertheless, the effects of brighter light and purer air are obvious, and if one deemed the cultivation in Brussels to be as nearly perfect as can be, at Moortebeke it is better still! A wide central

corridor, with large pavilions at intervals, gives access on either side to a number of span-roofed houses. A tramway runs the whole length of the central nave, so that potting-benches can be moved from house to house as required, while iron water-tanks can also be moved from place to place with equal facility, and turn-tables enable the trolleys to pass in any direction. Every here and there between the blocks of houses,

as the result of a cross between *Hippeastrum* and *Hæmanthus*. Crosses between Orchids include such curious intermixtures as *Dendrobium Wardianum* and *D. Brymerianum*, *Cattleya Schilleriana* and *C. Mossiae*. The houses vary in height according to requirements, and the pipes are sometimes raised so as to heat not only the lower portion but the upper portion of the houses beneath the roof also.



FIG. 91.—*FICUS EETVELDIANA*.

whose compartments are supported by pillars without dividing walls, are boiler and engine-houses, bothies, and other accommodation for the workmen. The boilers and pipes are so arranged that if one set fail others come into use, and no check is experienced. Not only are Orchids grown here in a manner which has excited the admiration of orchidists, but hybridisation is largely practised, both among Orchids and among other plants; thus a whole series of seedlings was pointed out to

As if these two establishments were not sufficient, a third has been recently established at Linthout in quite the opposite direction. Here, the experience derived in the construction and working of the other establishments has been turned to advantage. Linthout is not without its Orchids by any means; hybrid Ferns are grown here also in profusion, such as crosses between *Cibotium princeps* and *Cyathea medullaris*, and countless others.

But the chief feature at Linthout is the cultivation of economic plants, and of newly-discovered plants derived from the Belgian Congo.

By the kindness of M. Linden, who supplied the photographs, we are enabled to give illustrations of some of the plants newly introduced by him from the Congo, and which were recently exhibited by him in Paris. The names are of course provisional, as no botanical scrutiny is yet possible.

DICHORISANDRA THYSIANA, Hort. Linden (see fig. 90, p. 302).—A Commelynaceous plant of striking habit, and bold, ascending foliage.

FICUS EETVELDIANA, Hort. Linden (see fig. 91).—A fine species with noble foliage, leaves on long stalks spreading horizontally.

ASPARAGUS DUCHESNEI, Hort. Linden (see fig. 92, p. 305).—A very elegant species with falcate cladodes of varying length.

COFFEA ROBUSTA, Hort. Linden (see fig. 94, p. 311).—The name is amply justified by the young plant. It is hoped that the berries will be as promising as the foliage.

BAMBURANTA ARNOLDIANA, Hort. Linden (see fig. 95, p. 313).—This has been so named because the plant combines the habit of a Bamboo with the foliage of a *Maranta*. We shall give illustrations of others in a subsequent issue.

For the moment we can only refer to the enormous numbers of economic plants destined to supply the wants of tropical agriculturists which are grown here. Thousands and tens of thousands of Rubber-plants, *Castilloa*, *Hevea*, *Kicksia*, &c., of Cacao, of Coffee, and other economic plants are grown here. Among these Rubber-plants is one of great interest, as it is supposed that it may be grown for economic purposes in the Mediterranean districts, or anywhere where *Rhopala* can be grown. This plant is *Sapium tolimense*, which yields a supply of Caoutchouc in abundance, and of good quality.

Space forbids us from entering more fully into the details of this establishment, which is as marvellous in its way as the other two, and destined to confer the greatest benefit to humanity in the tropics. Should anyone doubt the extent of these cultures of economic plants, or their superb cultivation, let them go and see for themselves. They will not then say that the establishment has been over-rated by *A Rambler*.

ORCHID NOTES AND GLEANINGS.

CATTLEYA × HARDYANA.

A FLOWER of a very extraordinary variety which might well be called *Cattleya × Hardyana gigantea*, is kindly sent by Fred Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr., Mr. T. Stafford). It measures over 8 inches across the petals, each of which is 2½ inches wide. The front lobe of the lip is 3 inches across, and the whole flower broad in all its parts, and of thick, firm texture. In point of colouring, it is also exceptionally fine. The sepals and petals are light rose-purple, their bases and lower part of the mid-ribs being pure white. The lip is purplish-ruby-crimson, with a reddish-orange base, beautifully veined with bright yellow, which changes to white on the edges of the light-coloured patches at each side. The outside of the labellum is as showy as the upper surface. The original was named in honour of Mr. F. Hardy's father, who possessed a famous collection at Timperley, and it must be a great pleasure to have such a fine variety of it.

CATTLEYA INTERMEDIA PUNCTATISSIMA.

A very handsome form of *Cattleya intermedia*, in which the light rose-coloured sepals and petals are decorated with a number of small purple spots, is sent by Mr. Paul Wolter, Magdeburg, Germany. The flowers are large for the species, and the purple front lobe of the lip more showy than in ordinary forms, but there is no departure in the botanical features to warrant the supposition that

it is of hybrid origin. Nevertheless, in this and in some other extra fine forms of *C. intermedia* which we have seen, there is a sufficient resemblance to some of the forms of *Laelio-Cattleya* × *Schilleriana* (*C. intermedia* × *L. purpurata*) to suggest that they may be the result of a second crossing of *C. intermedia* in its wild state with the hybrid of it—*L. c.* × *Schilleriana*, growing with it.

KEW NOTES.

ASPARAGUS UMBELLATUS.—It is exceptional for an *Asparagus* to have claims as a flowering-plant, but those who have seen the lovely example of this species now flowering on a pillar in the Temperate-house at Kew will be ready to acknowledge them in this case. The stems have grown to a height of about 15 feet, branching freely, the branches drooping elegantly, and clothed with tufts of leaf-like cladodes an inch long, and dark green in colour. The flowers are developed in umbels of three to six at the tips of the branchlets; they are campanulate, half an inch in diameter, glistening white, with yellow stamens. They last well, and against the dark foliage they have a most pleasing spangled effect. Nothing could be more suitable for decorations, and especially for what are known as "shower-bouquets," than these flower-branches. According to Sir Joseph Hooker, who published a figure of this species recently in the *Botanical Magazine* (t. 7733), it is a native of rocky places in the Island of Madeira and the Canaries, where it was discovered by Masson 120 years ago. It was named *A. grandiflorus* by Willdenow. *W. W.*

ZIZANIA AQUATICA (CANADIAN RICE).

Sir Joseph Banks, considerably more than a century ago, was, I believe, the first one to successfully introduce this aquatic grass from North America. How long afterwards it remained in cultivation I do not know, but sooner or later it disappeared from cultivation. Its value as a food plant for wild fowl, many of which migrate in large numbers every autumn to districts where it abounds, led to several subsequent attempts to re-introduce and acclimatise it in this country; but it has never been thoroughly established, and its re-introduction has been only very rarely accomplished, owing to the seeds losing their vitality if they are allowed to remain dry for even so short a time as is required for their transmission across the Atlantic. I should think that seeds might be sent over in bottles of water. A few years ago, young seedlings were successfully imported to Kew by packing them in mud. These plants and their progeny have flowered and produced seed the last three autumns at Kew. Apart from its economic value, it is a very handsome and striking aquatic; it is an annual, and grows from 6 to 10 feet high, the narrow leaves being from 2 to 3 feet long. Towards the end of the summer the plant produces a large, spreading, pyramidal raceme bearing male and female flowers; the male, or pollen-bearing flowers, are confined to the lower part of the raceme. The seed is about the size and shape of a good Oat, and has quite a pleasant taste. Sparrows, by the way, have already found this out; a crowd of them may very often be seen feeding on a group of plants now seeding in the Lily-pond at Kew. The natural course appears to be for the seed to drop into the water when ripe, sink to the bottom, and there remain embedded in the mud till germination takes place in spring. With us, however, it does not appear to be safe to trust entirely to self-sown seeds. A portion at least ought to be gathered and stored through the winter in an open vessel of water, the latter being occasionally changed. When signs of germination appear in spring, they may be sown on soil covered by an inch or so of water, either *in situ* or in pans, and afterwards dibbled-in 8 inches or so apart. At Kew, up to the present, they have been grown in water from 1 to 6 inches deep. Possibly they may thrive equally well at a greater depth. *W. J. Bean.*

COLONIAL NOTES.

AUSTRALIA.

THE following letter from a correspondent in Sydney describes the condition of emigrant gardeners to Australia as being most deplorable. In England at the present time the supply of under-gardeners is scarcely equal to the demand.

"I wish to make known through the pages of the *Gardeners' Chronicle* the unhappy condition of gardeners in Australia. It is almost impossible for any of them to get constant work, four months being the average time they can stay in one place. The country is extremely adverse to gardening, owing to drought and the prevalence of insect-pests, which often destroy crops altogether. Gardening is not, as a rule, self-supporting in this country. It needs all a gardener can save to pay his railway and coach fares to and from one place of employment to another. He has nothing to expect from his unthankful calling but a life of misery and hardship, with the poor-house in the end. Only young men can obtain even occasional work. Men just past middle age may be seen in groups outside the labour offices waiting for a chance of employment. If they get it, they will often have to work a month to cover the cost of the fares, besides having to pay a pound for the agreement at the labour office. The people they have to work for have made their money hard, and will only pay what they cannot help. Most of the land here is very poor, and nothing will grow without artificial watering. There is an appalling number of suicides in Melbourne of worn-out working men who, being no longer able to compete with those who are younger and stronger than they, have no further hope of earning a living. *R. Griffith.*"

THE ROSARY.

THE AUTUMN HARVEST.

OUR great amateur Rose champion, in writing to me the other day said, "This has been the worst Rose season I ever remember!" and this was not the utterance of a disappointed exhibitor, but of one who had been successful all along the line, and I believe his experience coincided with that of most growers of the flower. But then this had reference to what I may call the first crop of blooms, and I think I may safely aver, never was there a more glorious September Rose-harvest, and the superiority of the Tea Roses for this purpose was never more clearly established. Of course, I am writing only from my own personal experience, and on looking over my rosary I find among the H. P.'s here and there a beautiful bloom of *Gloire de Margottin*, *Charles Lefebvre*, *Mrs. John Laing*, *Margaret Dickson*, and a few others, but they are only sparsely scattered over the beds, and one is constrained to say the term Hybrid Perpetual is an absolute misnomer. How it got into use is difficult to understand, it is not a correct rendering of the French term *Hybride remontante*, which simply means, I imagine, that after the first bloom is over, the shoots which are formed produce other flowers, but not that they produce a continuous bloom until the winter sets in. Anyone who plants them with this hope will be grievously disappointed. Many of the Hybrid Teas, where they have a large proportion of the Hybrid Perpetual blood in them, are nearly as shy of blooming, but where there is a large infusion of Tea blood it will influence the plants, so that they produce autumnal flowers. After all, it is amongst the Tea Roses that we find our desire for blooms at this season of the year satisfied, and as I pass to my Tea beds I find each plant crowded with flowers, and where due attention is given to them, producing as good ones as those which are produced in the June season. It may be useful to amateurs at this season to point out some which have given me great satisfaction, and they are those which beginners will do well to

plant. I need hardly insist upon the fact that the Seedling Briar, and Briar cuttings, are the only stocks to be relied upon for this class. We may occasionally get a very strong grower, such as *Marie Van Houtte*, to do well on the Manetti, but it is a rare exception. There is often a prejudice against the Seedling Briar for the stock, because it is so difficult to work; but for all that, it is to be preferred, I think, to the Briar cutting.

There are different species of wild Roses, and possessing different qualities, and some growers, I think, are often very careful as to which species the hews are gathered from; but this is, of course, a matter with which an amateur cannot deal. If he means to bud his own seedling Briars, he must be contented to get the plants where best he can. In these days naturally all weakly growers are well-nigh discarded; we tolerated them as long as we had no others of the same colour, and there are still a few which we must keep on. For instance, we have no Tea Rose comparable in colour to *Ma Capucine*. We cannot discard it unless some raiser gives us a better grower of the same colour.

Marie Van Houtte.—I put this at the head of the list because I think it is the best grower of all. I never saw it, I think, grown so well as by the Rev. F. R. Burnside, when he resided at Birch, in Herefordshire. The colour is a very pleasing light yellow, oftentimes tinged with pink; the flowers are produced in clusters, and in great profusion. I do not think that anyone can be disappointed in this beautiful Rose.

Catherine Mermet.—Another vigorous and beautiful Rose, not quite so vigorous as the preceding, but a good grower. The colour is a light rosy-flesh, and beautiful both in bud and when fully expanded; it is very sportive, and has given us very many beautiful sports.

Souvenir de Catherine Guillot.—A beautiful flower of deep colour of the William Allen Richardson and Sunrise character; the colour is reddish-orange, and a Rose destined, I think, to be very popular.

Anna Olivier.—A globular Rose with high centre, variable in colour, but generally of pale buff colour; very constant, and beautiful in form.

Muriel Grahame.—This is one of the sports from *Catherine Mermet* gained by Mr. Brown, of Reigate, and sent out by Messrs. Alexander Dickson & Sons. It gained the gold medal of the National Rose Society; a pale cream with a very faint tint of yellow at the base—a much admired flower.

Madame Hoste.—A very useful yellow Rose; whether a sport or not I do not know. Very constant, free flowering, pale lemon-yellow in colour. It is one of the most reliable autumn bloomers we have.

Souvenir de S. A. Prince.—A sport from *Souvenir d'un Ami*, and one of the most beautiful white Teas. It obtained the gold medal of the National Rose Society. There was an American sport called the Queen about the same time, but of course we give the preference to our own flower!

Maman Cochet is one of the best modern Roses, a very deep flesh colour, the outer petals sometimes having a rosy tint. There is, however, to my mind a certain floppiness about the shape, unlike the beautiful regular form of *Comtesse de Nadaillac* or *Souvenir d'Elise*, but it is a Rose which must be grown by everybody, being equally effective in the garden and as an exhibition flower. White *Maman Cochet* is a white sport of the foregoing, with a slight tinge of lemon at the base.

Innocente Pirola.—A very beautiful and vigorous growing Rose, now more than twenty years in cultivation, and almost always to be seen in prize stands.

Madame de Watteville seems to be somewhat variable in its growth, some cultivators complaining of it as not being vigorous (of which number I am afraid I must be one), while others speak of it as very vigorous; the colour is creamy-white, and it

is bordered with rose. I have seen some very beautiful flowers of it in East Anglia.

Madame Charles is another strong grower, very vigorous, and a beautiful shade of colour—a bright apricot, somewhat like *Safrano*.

Comtesse de Nadaillac.—One cannot set this down as a most vigorous Rose, although I have a couple of strong plants of it against the wall; and I remember seeing at Mr. Fowler's at Taunton some plants of extraordinary vigour in the open. It is a Tea Rose which everybody admires, and which Mr. George Prince brought into great prominence

There is another Rose, not a Tea, but a Bourbon, which has been especially lovely this autumn—I allude to *Souvenir de la Malmaison*. I have one plant of it which is now covered with bloom, and its history bears strikingly upon the question sometimes asked—"How long do these Roses last?" My plant is, I believe, fifty years old. Thirty-two years ago I lifted it from my Deal garden, and transferred it to its present position. It was rather a rude shock for it, but after a year or two it took kindly to its surroundings, and is, as I said, this year, a mass of beauty. There are,

well ripened, and about 9 inches in length, and cut level under the bottom eye, or if with a heel of the old wood so much the better. The cuttings can be planted in rows 18 inches wide from row to row, and 3 inches apart, in sandy loam. A sloping trench 1 foot deep can be cut out by the line, and a good scattering of burnt earth and river-sand put into the bottom of the trench, on which the base of the cutting will rest, which will materially help it in forming a good early callus. Soil should be added gradually, and as the work proceeds well trodden towards the cutting, so as to give a firm root-hold when commencing to grow. The cutting should be planted about two-thirds of its length under the soil, and made quite firm till the trench is filled up, and afterwards a good dressing of cocoa-nut fibre can be put over the surface of the ground. This tends to check evaporation in spring and summer, and as a protecting mulch for winter also. One great reason why so many people fail to root their cuttings is the choice of a wrong aspect. I have found they do best planted facing due north, as there is not the same danger of the early summer sun unduly stimulating the buds into growth without corresponding root-action, as in other aspects; and this is a very important matter, as the growth of both buds and roots should be reciprocal, and it will be found that this object will be best attained if the right aspect is given them, and under ordinary circumstances the success of the cutting will be assured. I would only recommend good hardy varieties of the hybrid perpetual class and summer-blooming varieties. J. D. G.

NURSERY NOTES.

MR. M. PRITCHARD'S, CHRISTCHURCH.

ONE of the signs of the change observable at the present day in the style of flower-gardening is the rise in many parts of the country of nurseries in which hardy herbaceous perennials form the chief stock-in-trade. Of these, that of Mr. Pritchard's is not the least well-furnished in the south, as will have been evident to visitors at the meetings of the Royal Horticultural Society, and at some horticultural shows in the provinces. This nursery has not been established many years, but it has already become filled to overflowing, so that the proprietor is taking in additional land, and extending its boundaries. The soil is light, sandy, and of a peaty nature; and by its situation is liable at certain seasons to be flooded by the overflowing of the neighbouring river Avon. Almost all kinds of plants do well in it, and form dense masses of roots, so that they invariably recover from removal rapidly under ordinary care.

October is rather late in the year for a visitor to find much in bloom, although the stock of plants may include between 3,000 and 4,000 species and varieties. There were, however, many things still in good bloom, or just past their best, and of these we will mention the following: *Plumbago Lar-pentæ*, was still covered with its pretty dark blue flowers, presumably the second crop this year. No one who has not seen this once favourite plant growing in dense masses (not planted singly in the borders as it is often seen) can form a true notion of its beauty in the flower-garden; and it is so hardy that no winter hurts it. Some belated plants of *Erigeron aurantiacus* were furnished with blooms. The stems reached a height of 9 inches, and the foliage 2 inches—a good front row plant. *Geum chilense*, with dark crimson blooms, was noted, an uncommon variety, and one that is decidedly handsome. Other *Geums* were past. A white-flowered *Lavender* was remarked, useful as a variety, if not so nice-looking as the type. Shrubby *Phloxes* in bloom were numerous, and remarkable for their moderate height and bright colour. We may mention P. "*Coquelicot*," with large flowers, and of a deep crimson colour, a fine subject for small beds, edgings, or groups in the flower borders. The specific name is French for the wild Poppy, and was given doubtless in allusion to the bright colour of the-



FIG. 92.—*ASPARAGUS DUCHESNEI*. (SEE P. 303.)

with the wonderfully-coloured blooms that he exhibited. And who can describe its colour?—peach, apricot, and copper, with tints of other colours as well. Its shape is regular, the substance of the petals good; and to my mind, there is no Tea Rose comparable to it.

The *Dijon* Roses, as they are called, always give a profusion of blooms in the autumn, but they hardly come up to one's idea of pure Tea. Many of them are very beautiful before they open, and probably *Bouquet d'Or* is one of the best, both in its habit of growth, which is not so lanky as *Gloire de Dijon* and *Madame Bérard*, but it is very free, and its foliage very compact.

I have no doubt, many other Tea Roses which have done well with other amateurs, but I have only mentioned those which have specially struck me this autumn, and which I would recommend to all lovers of the flower. *Wild Rose*.

OWN ROOT ROSES.

The present is the best time possible for the out-door propagation of the above, and the following method, if followed intelligently, will be found a very simple and inexpensive way of working up a stock of plants. The grower will doubtless have a few dozen of plants from which to take the cuttings, which should be

ower. *P. la Soleil* (Lemoine) is likewise a beautiful variety, and said to have flowers of the truest pink; height about equal to the first-named. *Arnebia echioides*, the "Prophet's Flower," was found in many places in the nursery. Several *Sisyrinchium*s were in flower, notably *S. bermudianum*, with blooms of a deep blue tint; and *S. convolutum*, with yellow-coloured flowers of the size of *dorum*. Its best season is rather earlier. A bed of *Delphiniums* was remarked in full flower, a rather remarkable fact at this date; but we learned from Mr. Pritchard that they were raised from seed sown in January of the present year. Next year these plants will flower at the usual season—July and August—a hint as to the lengthening of the flowering season of these beautiful plants. Several *Kniphofias* were flowering freely; more especially *K. Macowani*, with numerous slender flower-stalks surmounted with heads of light scarlet flowers. The height of the stalks would be about 2½ feet. The other variety was *K. Triumph*, with stalks 3 feet high, and flower-heads 9 inches long. The flowers are of an orange-red tint, and they possess long protruding anthers, which give them a remarkable appearance. The orange-coloured *Trollius asiaticus* is a desirable species of the Globe Flower, the flowers bright and showy.

Plants of *Gaultheria procumbens*, covered with their scarlet-covered fruits, were noted. It is an excellent plant for the rock-garden, and might be found of value for planting under trees where the shade is not very dense—the height of a plant is about 3 inches. Growing alongside were the type form of the *St. Dabeoc's Heath* (*Dabeocia polifolia*), and the white variety, both of which were flowering freely, although the usual season was long past. Shrubs of *Desmodium penduliflorum* formed graceful masses of reddish-purple flowers, and reached the height of 4 feet. A yellow Foxglove is somewhat of a rarity in gardens, and here an alpine form, viz., *D. grande*, with pale yellow flowers, was observed. The finest autumnal flowering *Potentilla*, viz., *P. autumnalis*, a species growing about 8 inches high, is now freely bedecked with white flowers.

Amongst *Heleniums*, there is nothing to surpass *H. superbum* in profusion of bloom. The height of the plant would exceed 6 feet. A bed of *Erica carnea*, the Winter Heath, is coming into flower; and plants of *Phygelius capensis* were still gay with their red blossoms. *Asters* (hardy) were in many instances masses of showy colours, but for profuse flowering and general effectiveness the palm must be given to *A. Pleiad*, a flower of a light purple tint. Another beautiful *Aster* is *Mrs. Raynor*. An equally telling plant is *Boltonia asteroides*, of which a specimen 7 feet high and broad, and a perfect mass of bloom, was remarked. Of *Colchicums*, now conspicuous flowers on rockeries and elsewhere, there were many of the double white-flowered variety, *C. autumnale*, and others planted in a variety of sites; also *Alströméria pulchella*, and *A. psittacina*, both of which were in bloom.

Growing in the front of a sunny wall were *Sternbergia lutea*, the plants showing a quantity of blossoms; *Oxalis lobata*, a hardy species with flowers of a rich yellow colour, a pretty plant that is still rare in gardens. Water Lilies and diverse aquatics are grown in quantity in a series of oblong tanks, measuring each in area 12 feet by 6 feet, and 2 feet in depth. Most, if not all the species that can be grown in the open air in this country are under cultivation. Very little was, however, in flower except *Aponogeton*.

Bamboos are receiving much attention, and some large plantations of the more trustworthy species are to be found in the nursery. We observed many plants of *Phyllostachys aurea*, and tall, strong plants of other species for which there is a certain demand for the sake of immediate effect. Great masses of *Arundo Donax* are conspicuous objects in the nursery, and a vigorous plant of *Vitis Coignetia* clambers along the top of a wall.

Altogether this nursery is well worth a visit from the lover of hardy plants, for it is filled with all sorts of good things, the mere mention of the names of which conjure up visions of floral beauty. *F. M.*

FLOWERS IN THE SOUTH-WEST DURING AUGUST AND SEPTEMBER.

(Concluded from p. 288.)

CLIMBING PLANTS.—*Bignonia* (*Tecoma*) *radicans*, though a climber of unrivalled brilliance, is by no means commonly grown. One side of an old house in a neighbouring village is completely covered by a plant of this *Bignonia*, reputed to be seventy years of age; and in August, when veiled in the orange-scarlet blossoms, it is a resplendent sight. In September the *Virgin's Bower* (*Clematis flammula*) drapes archway and trellis with billowy trails of starry, fragrant blossoms; the yellow-flowered *C. graveolens* and *C. songarica* bloom, their flowers succeeded by feathery seed-vessels, delicate as those with which the Traveller's Joy (*C. vitalba*) drapes hedgerow and evergreen in the dull November days. On northern walls the *Lapagerias* are flowering freely, and *Mandevilla suaveolens* has borne its scented white blossoms against the sun-warmed bricks in a sheltered garden. The *Passion-flowers* are changing flower for fruit, which will through the winter glow amid the dark foliage like fairy lamps. The Ivy-leaved *Pelargonium Madame Crousse*, largely used as a climber in the south-west, has provided a breadth of soft colour on house-walls, often ascending them to the very eaves; while here and there *Plumbago capensis* spreads a sheet of palest blue over a south wall. During the past four winters neither *Pelargoniums* nor *Plumbagos* have been injured by the frost. *Polygonum baldschuanicum* has proved an extremely rapid climber, and has been in flower for many weeks, garlanding a tall trellis with a misty tracery of blossom; while *Physianthus albens*, whose flowering season has long since concluded, has formed several huge corrugated seed-pods. It is in September that *Solanum jasminoides* attains the period of its greatest beauty, a beauty that has been slowly growing week by week since the earliest days of May, and has at length culminated in the plants being transformed into veritable cascades of white flower-clusters.

October will witness but little diminution of the display, and should no severe frosts occur, a few blossoms will doubtless see the year out beneath the eaves. *Tacsonia mollissima*, from Quito, has produced its pink flowers in quantity on an open trellis, and has proved hardy for some years. *Tropæolum tuberosum* is bright with its long-stalked orange and crimson flowers, and the climbing *T. Lobbianum* blazes in intense scarlet against a cottage wall. *S. W. F., Devon.*

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By T. EDWARDS, Plant Foreman, Royal Gardens, Frogmore.

Indian Azaleas.—Examine each plant before affording water, and if water be necessary, apply sufficient to thoroughly wet the compost, then allow the plant to become rather dry before again applying water. When the plants have been removed to the houses they are more liable to thrips than when they were out-of-doors, but being at rest they will not suffer from stronger vaporisings than would be safe in the growing season.

Cape Pelargoniums and Marguerites.—Cuttings should be potted up into 3-inch pots, and transferred to 5-inch pots after Christmas. Keep them rather dry, and close to the glass in an airy pit, or on shelves in a greenhouse. Autumn-struck cuttings of *Fuchsias* should also be potted up, and kept growing steadily in a sunny position in an intermediate-house, syringing them freely.

Poinsettias.—Make a selection of those plants that have set their flower-buds, and remove them to a house where they may be afforded a night temperature of 75°, rising to 90° during the day with sun-heat. Expose the plants to full sunlight, and ventilate the house only during the continuance of sunshine. Use stimulants occasionally, and let

the atmosphere be moist until the bracts have fully expanded, when the plants may be moved to a warm conservatory or intermediate-house.

Euphorbia Jacquiniflora.—Place the plants on the south side of the house, and tie the shoots loosely to the roof. Afford water with care, and weak guano-water alternately with tepid rain-water.

Eucharis required to flower before Christmas should be placed in the warmest part of the stove, and large plants that have not been re-potted recently will require liberal supplies of manure-water. Syringe the plants freely.

Forcing-house.—A few plants of *Azalea indica* alba and *Deutsche Perle* may now be introduced to heat, that they may flower when the bulk of *Chrysanthemums* are past; also a batch of *Richardias*, *Roman Hyacinths*, and *Narcissus double Roman* and *Pearl*. *Lilium Harrisii*, after commencing to grow, should be moved to cold pits for a time before they are subjected to heat.

Mignonette should be plunged in ashes close to the glass in a pit where heat can be afforded during cold nights. A little ventilation should be afforded at all times, and the sashes may be removed entirely on fine days. Turn the pots round occasionally to prevent the roots passing through them, and afford the plants regular supplies of manure-water.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Restrepas are generally associated with *Masdevallias*, but they need drier conditions than do *Masdevallias*; they need more light also, and should be cultivated in baskets or pans, so that they may be suspended. Very little water is required during winter to keep them in proper condition.

Trichosma suavis is another plant that succeeds with *Masdevallias*, and is now developing its flower-buds in small sheaths, which nearly always turn black, and are sometimes removed in consequence, though they should not be. This plant has thick, fleshy roots, and needs to be kept well on the dry side when in an inactive state.

Pleurothallis produce such insignificant flowers that they are seldom cultivated. *P. Roezlii* is the best, and will succeed with others in an intermediate temperature, where they may be kept moderately dry for some time to come.

Odontoglossum crispum.—Importations of this favourite Orchid will be very welcome this season, and intending purchasers should secure a quantity as early as possible, so that the plants may obtain the benefit of a long growing season. The individual pieces, soon after their receipt, should be freed from all dead roots and superfluous bracts and other matter. Do not pull the bracts forcibly away, but cut them off near to the base, leaving any that may help to shield living buds or growths from injury and from strong light. If there is a large number, lay them out on damp sphagnum-moss until such time as most of them are fit to be potted up. But some may be fixed at once in the desired receptacles, by first placing crocks in the lower half, then placing the plant in the pot, and securing it in position with a few pieces of fibrous peat. Place them afterwards on a stage in a cool, moderately dry, and not over light part of the *Odontoglossum-house*. The atmosphere may be moist, but only a little water should be applied to the peat and crocks until root-action occurs. At this stage the operation of potting may be completed. Pack around the base of the new growths sufficient peat and sphagnum-moss in equal parts as will fill the receptacles; then afford a good watering, and place them in a lighter position. Other *Odontoglossums* that may be treated similarly are *O. Pescatorei*, *O. luteo-purpureum*, *O. Lindleyanum*, *O. odoratum*, *O. nævium*, *O. triumphans*, *O. tripudians*, and the natural hybrids *O. Andersonianum*, *O. Ruckerianum*, *O. Wilckeanum*, *O. elegans*, *O. excellens*, &c.

Odontoglossum cirrhosum needs more warmth than the Columbian species, and should be grown in an intermediate temperature, be very sparingly watered, and afforded all the light obtainable during the winter months.

Oncidium varicosum and *O. concolor*.—The first-named species is now flowering, and will continue so to do for some time if several plants are grown. It is so free flowering, that the spikes should not be

permitted to remain long upon the plants. When commencing to bloom the plants require an intermediate temperature, but when the flower-spikes have been cut, let the plants be hung in a cool-house, and given water only occasionally. *O. concolor*, now that the pseudo-bulbs have attained their full dimensions, needs but little water, still the pseudo-bulbs should not be allowed to shrivel in the least.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Manuring.—Unless the soil is unusually fertile, or the trees are young and vigorous, fruit-trees require to be fed by surface mulchings. If a few strong planks be used for wheeling upon, manure may be conveyed to fruit-tree borders and plantations at once without waiting until frosts occur. The roots of the trees will benefit by this save of time, because the soluble constituents of the manure will be better washed down to them by the rain. The solid matter remaining may be pointed-in at any time after the pruning has been finished, or a little soil thrown over it will be sufficient to ensure a neat appearance. If the manuring of Raspberry, Currant, and Gooseberry plantations has been done according to previous directions, the Cherries, Plums, Pears, and Apples may now be proceeded with. Do not mulch wall-trees at present; if an early start will be made with the pruning, tying, and training of these trees, the manure would then be inconvenient, and the mulch may very well be left until the trees are finished. Trees planted in the open should be afforded sufficient manure when spread to reach as far as the branches of each tree extend. Remove all weeds and leaves from under the trees before spreading the manure, and burn the old foliage if pests of any description have been troublesome.

Strauberies.—Remove all runners, and hoe and rake the surface of the soil between the rows. Any beds or plantations that are two or more years old, should be top-dressed with material from a spent hot-bed. If any of the plants have become raised much above the level of the soil, afford them some old potting-soil, and work it well around the collar of the plants, and press it firmly with the fingers.

Pruning.—Gooseberries and Currants may soon be pruned, and afterwards the soil around them may be dug roughly, so that it will be exposed to the influence of frost and wind. If the sawfly-caterpillar has been prevalent, before digging the plot remove the surface-soil under the bushes to the depth of 3 inches, then scatter some fresh-slaked lime on the surface, and afford a 3-inch top-dressing with fresh soil. Excepting the destructive "bud-mite," the worst enemies to the Currant and Gooseberry are brown-scale and red-spider. Both may be destroyed by a thorough spraying with a caustic soda solution when the leaves have fallen. If sparrows are unusually numerous, it will be well to defer pruning until the spring, or else sprinkle the trees occasionally with a mixture of lime and soot.

Various.—If any aphides can be detected on the Peach, Plum, or Cherry-trees, spray them with an insecticide forthwith. Nets that have been used for fruit-trees will need to be stored; and if any Morello Cherries are still upon the trees, send them to the kitchen without delay.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Cardoons.—Plants raised from the first of the two sowings may now be earthed-up. Those from the later sowing also will soon be ready for blanching. At this season the work should not be proceeded with at intervals. Any that are needed for exhibition should be blanched very carefully. Arrange the stalks evenly in an upright position, and place stiff brown paper around them, binding it securely with thin hay-bands, commencing at the bottom, and continuing them to within 1 foot from the top. All suckers and small leaves should be removed before earthing-up is commenced, dry weather being selected for the latter operation if it be possible. Cover the tops during frosty weather with bracken or clean straw.

Mushrooms.—A moderate sprinkling with tepid water occasionally will freshen beds indoors that are now yielding crops; covering them afterwards with fresh litter. When the beds seem nearly spent,

apply a mulch of short, fresh manure for a few days, and then replace it with fresh litter.

Forcing.—Those who have to practice the old method of forcing will now need to get together the necessary fermenting material. If litter has been stored for some months past, a good quantity of freshly-fallen leaves may be soon obtained, and the work of mixing in heaps may soon commence. These are excellent for forcing purposes, as the heat produced is of a steady and mild character. The less litter used the better, as the leaves will afford heat for a longer period providing they are properly turned over and damped, &c.

Dwarf Beans in Frames.—Sowings should be made every three weeks, and if the first sowing was made as advised in a former calendar, artificial heat will now be necessary, but fresh air should be afforded the plants, if only for an hour or so during the warmer part of the day. Gather the pods as soon as they are fit for table use, and the plants will remain profitable for a longer period. About this date a somewhat large sowing may be made in pots, in order to obtain pods at the end of December, which is not so easy from plants in frames. The successional plants, and those just coming into bloom, should be encouraged to grow slowly by gradually increasing the heat until a temperature of 70° is obtained. The night temperature should not fall much below 65°. Slight syringings will be necessary to deter red-spider, and when the plants commence to bear pods, afford manure-water occasionally.

Turnips.—If frequent sowings were made from the middle of July until September, there should be a good succession of crops. Yellow Perfection and Chirk Castle Blackstone are invaluable for producing tops next spring, so should be left in the ground for that purpose. The plants from the first sowings of Veitch's Red Globe should now be stored in soil, but do not cut off the tops too closely. The later sowing of this variety may be left in the ground until the end of November. Use the hoe frequently between the rows, and occasionally sprinkle the soil with soot, wood-ashes, &c.

THE FLOWER GARDEN.

By J. BENLOW, Gardener to the Earl of HESTER, Abbotsbury Castle, Dorsetshire.

Planting Spring Bulbs.—As soon as the summer-flowering plants have been removed from the beds, afford the beds a good dressing of decomposed dung, and dig them deeply. Hyacinths, Tulips, &c., require a deep, rich sandy soil, and it may be raised 4 inches above the ordinary level; planting should be done when the soil is in good working condition, and they may be inserted with blunt dibbing-sticks of various sizes. Any hardy spring-flowering plants, as *Myosotis*, *Silene*, *Daisies*, *Wallflowers*, and *Antirrhinums*, may be planted immediately afterwards.

Anemones and Ranunculus.—These do best in a sunny position. Plant them 4 inches apart each way, and after covering them, afford the surface a mulching with cocoanut-fibre.

Narcissus Bulbs intended for the woodland or grassy glades, &c., cannot be planted until some rain has fallen; but directly the soil has been well moistened, the necessary holes may be easily made with a blunt iron dibber. Cover the bulbs with some fine leaf-soil and crushed bones.

Storing Dahlias, Cannas, &c.—Remove the tops of Dahlias after they have been cut down by frost, and burn the rubbish, which is sure to harbour earwigs and other pests. Tubers of the more robust varieties may be placed on shelves in the boiler-house or in dry cellars. Pompon Dahlias and Dwarfs will keep sound better if the tubers be placed in shallow boxes containing fine sandy soil. Water them very sparingly.

Climbers.—Banksia and other Roses of which this year's growth are still free, should now be tied in securely, but first remove all decayed and thin wood. Ornamental Vines, Azaras, *Elaeagnus*, *Desfontainea*, *Leptospermums*, *Loniceras*, *Punicas*, *Escallonias*, &c., which are growing against walls should be neatly trained. Retain the best shoots and remove all others. In cases of old castle-walls or ancient buildings, the "spur" system may be best.

General Work.—The present is a good time to renovate carriage-drives and broad walks near the mansion. After taking the levels, allow a fall

from the centre to the sides of 3 to 6 inches, according to the width of the walks. If the gravel be unsightly and covered with conifers, turn it with flat forks, and place the weedy side downwards; then add a surfacing of fresh gravel.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of PORTLAND, Welbeck Abbey, Workson.

Figs.—With the fall of the leaf the earliest trees in borders should be pruned and made ready for forcing in six weeks hence. If the shoots have been regulated and trained-in, not much will remain to be done at the present time. Strong, short-jointed shoots that are well set with embryo-fruits should be retained, and all immature ones removed, distributing the former so as to ensure fruits all over the trellis or wall. After pruning the trees, wash them with soft-soap-suds, painting the trees afterwards if mealy-bug exists on them with a mixture of clay three quarters, gas-tar one-quarter, made by adding soft water of the consistency of paint. This mixture should be well worked into all crevices and joints of the shoots, and the walls and stages should be dressed with petroleum and then be whitewashed and painted as may be desired. If the trees have made very strong growth, and have not already been root-pruned, it is yet time for carrying out this operation, not performing it quite so severely as might have been safe a month ago. The long roots that are destitute of rootlets should be discovered and be cut back to within 2 feet of the stem, and the suckers arising from the roots should be cut off. Let the severed roots be laid in turfy loam three-quarters, and old mortar-rubble a quarter, to which a small quantity of half-inch bones is added, and afford the same as a top-dressing after removing the surface-soil to the depth of 6 inches, making the new soil firm, affording water copiously, and a mulch 3 inches thick of short stable-litter.

Cherries.—If possible the lights should be removed from the roof and the trees exposed to the weather for two months. Failing this, throw open all lights and ventilators. Any trees bereft of leaves may be pruned now. Cordons should have the young laterals cut back to within an inch of their base, and leading shoots left of full length, until the trellis is covered. Fan-trained trees should have young shoots laid in all over the trellis. A fan-trained tree entails more work in pruning, training, &c., and is slower in furnishing the trellis with bearing shoots than a cordon, but fewer trees are required to fill the house. The borders should not lack moisture, whether the trees are exposed to the air or not. Any over-vigorous young trees should be carefully replanted at this season, affording them a good proportion of fresh loam and charred soil. The check that is thereby afforded will cause a slower and surer development of the fruit. The present is the best time to plant, and the following list contains the best and the surest cropping varieties for cultivation under glass:—Early Purple Gean, rather small, but prolific and delicious; Early Rivers, large and of fine flavour, a moderate cropper; Black Tartarian, heavy cropper, and first rate; Frogmore Early Bigarreau, very prolific, and a good forcer; Bigarreau Noir de Schmidt, a fine prolific Cherry; Governor Wood, a heavy cropper, and rich flavour, liable to crack during damp weather; Bigarreau Napoleon, a late, very fine, moderate cropper.

METROPOLITAN OPEN SPACES.—But a comparatively few years ago Tottenham was an open suburb; it is so no longer, has not been so since people travelled away from dear rents for little-house accommodation. Tottenham is, in fact, filled up by bricks and mortar, and the District Board has had to look about for grounds out of which to carve open spaces—lungs for the pent-up denizens. In a few weeks the "Chestnuts" estate of several acres will be thrown open to a waiting crowd, and the residence attached to the estate opened up as reading-rooms, &c.; but this place of recreation is not large enough for a perpetually extending locality like Tottenham, and the District Board have made arrangements to take over another in every way suitable open space, and then the old-time suburb will be the possessor of three recreation-grounds.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Oct. 29	{ National Chrysanthemum Society, Floral Committee meet at 3 P.M.
TUESDAY,	Oct. 30	{ Croydon Chrysanthemum Society's Show (2 days). Wolverhampton Chrysanthemum Society's Show (2 days). Torquay Gardeners' Association Chrysanthemum Society's Show (2 days). Penarth Chrysanthemum Society's Show.
WEDNESDAY,	Oct. 31	{
THURSDAY,	Nov. 1	{ Kent County Chrysanthemum Show, at Blackheath (2 days).
FRIDAY,	Nov. 2	{ Battersea Chrysanthemum So- ciety's Show (2 days).

SALES.

MONDAY, Oct. 29.—Clearance sale of General Nursery Stock at Cockmannings Nurseries, St. Mary Cray, by order of Messrs. G. & J. Lane, by Protheroe & Morris, at 11.30.
—Clearance Sale of Plants and Furniture at the Nurseries, Bexley, by order of Mr. H. E. Gutteridge, by Protheroe & Morris, at 12.30.—Dutch Bulbs, at Protheroe & Morris' Rooms.—Bulbs, Palms, &c., at Stevens' Rooms, 38, King Street, Covent Garden.

TUESDAY, Oct. 30.—Important Sale of General Nursery Stock at the Brereton Nurseries, near Rugeley, by order of Mr. James Bain, by Protheroe & Morris, at 12 o'clock.—Sale of Evergreen Shrubs, Ornamental Trees, Fruit Trees, and other Stock, at 319, Trinity Road, Wandsworth, by order of Mr. Robert Neal, by Protheroe & Morris, at 12 o'clock (three days).—Dutch Bulbs, at Protheroe & Morris' Rooms.

WEDNESDAY, Oct. 31.—Important unreserved, 2 days' Sale of Nursery Stock at Sutton Coldfield, Warwickshire, by order of the Aldridge Nursery Company, by Protheroe & Morris, at 12 o'clock.—Dutch Bulbs, Continental Plants, Roses, &c., at Protheroe & Morris' Rooms.—Hardy Shrubs from Holland, English Roses, Bulbs, &c., at Stevens' Rooms.

THURSDAY, Nov. 1.—Dutch Bulbs, at Protheroe & Morris' Rooms.—Bulbs, Palms, &c., at Stevens' Rooms.

FRIDAY, Nov. 2.—Dutch Bulbs, Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—45°9'.

ACTUAL TEMPERATURES:—

LONDON.—October 24 (6 P.M.): Max. 60°; Min. 51°.

October 25.—Dull; warm; slight rain.

PROVINCE.—October 24 (6 P.M.): Max. 57°, S.E. Counties; Min., 47°, Shetland.

WE extract the following remarks on the value of flower-shows from a transatlantic source, but they are applicable also on this side of the water:—

"Exhibitions of horticultural products," says Professor BAILEY, in the *Cyclopædia of American Horticulture*, "may be made for either of two purposes—to illustrate the subject or thing itself, or to illustrate an ideal. As a matter of fact, all exhibitions of domesticated products are for the latter purpose. If an exhibit were made of what a species actually is—whether Dahlia, Peach, or Pumpkin, hostility would be aroused, for in that case the incapacities, as well as the capabilities, of the plant would be shown. Exhibits are really made up of those selected forms which most nearly approach an ideal. This ideal may be a commercial one, or an artistic one. The commercial ideal is likely to be held up as the only one. It is usually held dogmatically, and one who has another ideal is a heretic. A so-called show-plant, as a Chrysanthemum or a Dahlia, may represent only one of the many possibilities of the species; and each of these possibilities may be worth the cultivating. It is a significant fact that many of the commercial types are not the most artistic or the most satisfactory ones. They are usually those which are most certain to give uniformly profitable results to the grower. The constant forcing of these types on the public attention

tends to popularise them. The Chrysanthemum admirably illustrates these remarks: the extra-large show blooms are less satisfactory and agreeable to most persons than freer, smaller, and more individual blooms.

"The exhibition ideal in any fruit or plant has a powerful influence on the evolution of the plant. People breed for that ideal. They discard those forms which contradict the ideal. Persons who care less for the formal ideal than for variety, individuality and artistic merit, are amateurs in the best sense of the word. Skilled amateurs usually deal with more varied and difficult subjects than the professionals or commercial growers. It is remarkable how plants have been bred to the exhibition standard. The practice of carding and dressing the Carnation in earlier times has produced the high-centred, flat-bottomed Carnation of to-day. In England, the Carnation ideal has been an entire or rose-leaf petal; in America, the ideal is a moderately-fringed petal.

"Perhaps the effect of the exhibition ideal is nowhere so well seen as in the custom of exhibiting single blooms; it has developed the individual flower rather than the plant as a whole. The Chrysanthemum, Dahlia, and Camellia, are examples. The old world custom of showing single blooms of florists' flowers in holes in a board, or in sand—like so many heads in a pillory, enforces the ideal of the single flower. Fortunately, this type of exhibition has had little popularity in this country. A comparison of the pictures of prize exhibition subjects in European and American journals, would show some interesting contrasts. It would contrast single-flower, or single-specimen ideals with bouquet ideals, in florists' flowers. In general terms, the entire plant is the unit, rather than the flower or fruit alone. The love of flowers is only the beginning of wisdom. The love of plants is a higher stage. It is pleasing that American exhibitions are more and more given to plants, and to artistic displays. The old world exhibitions, while emphasising the single flower ideal in florists' plants, are very rich in displays of specimen plants of other kinds.

"Every exhibition should make its motive or animus clear. The visitor should know whether it is the purpose to show florists' ideals, amateurs' ideals, or both. The best exhibition of any subject, is that which shows all its possibilities and merits. The tendency is for the amateurs' ideals not to be seen at the shows. There are fewer prizes for these ideals, and the amateur leaves his choicest things at home. Yet the amateur is the conservator of meritorious plants. He holds interesting and artistic varieties and species decade after decade, and prevents their loss. It is the amateur who has kept the old *Laciniatum* Chrysanthemum against the changing moods of the trade. Consider that the greater number of species described in this *cyclopædia* are known only to the amateur. Our horticulture would be poor indeed if only commercial ideals should prevail.

"A leading value of an exhibition is to maintain a society. The annual or periodical show keeps alive interest in the society, and thereby enables the society to extend its beneficent work. The great displays made by the American Pomological Society, the Society of American Florists, the American Carnation Society, and other organisations, are excellent examples of the value of an exhibition in aiding to maintain a society with educational functions. This gives a suggestion for the local improvement society: have an exhibition in spring and fall; invite the professional growers to show their

specialties at the local show. It is well to make some one plant or group of plants a central feature of each show; and this plant should be shown in all its various forms. Endeavour to interest people in plants themselves, even though they may not show the formal ideals of the plant-breeder. Good subjects for these central features are the different fruits and vegetables, Roses, Carnations, Chrysanthemums, Dahlias, Gladioli, spring bulbs, aquatics, bog-plants, alpine plants, Cacti, Orchids, Poppies, Sweet Peas, Violets, Ferns, Pæonies, ornamental autumn fruits, wild flowers, bloom of hardy shrubs, foliage or bloom of forest trees, and Vines.

"Aside from these technical uses of the exhibition in illustrating the progress of plant-breeding, the show also may be made a powerful means of extending and deepening the love of Nature. In this guise it will appeal to every person, not to horticulturists only. In every school an exhibition once or twice a year should be made an adjunct of Nature-study instruction. Such an exhibition should not stop with plants, but include all natural objects. It should not be a technical horticultural exhibit, and therefore its further discussion is not germane to this work."

THE LOGANBERRY.—This is an American introduction of much promise as a hardy fruit. Professor BAILEY informs us that it is the product of an American Dewberry crossed with the pollen of the European Raspberry. The "berries" resemble large Blackberries or Mulberries, and have a reddish colour shining through a glaucous bloom, and indicative of their origin from the Raspberry. The flavour is rich, with a pleasant acidity. The plants are hardy, and are said to be very productive. The photograph whence our illustration (fig. 93, p. 309) was taken was forwarded to us by Messrs. W. FELL & Co., of Hexham. It represents a portion of three plants against a wall near Douglas, Isle of Man. The plants are trained to telegraph-wires.

LINNEAN SOCIETY.—The papers to be read at the first meeting of the Session 1900-1901 on Thursday, November 1, at 8 P.M., will be the following:—Dr. CHARLES CHILTON, M.A., F.L.S., "The Terrestrial Isopoda of New Zealand." Mr. J. E. S. MOORE, F.Z.S., "On the Character and Origin of the 'Park Lands' in Central Africa. (Communicated by Professor J. B. FARMER, M.A., F.L.S.) Exhibitions:—(1). Mr. J. E. HARTING: Hybrid between Red Grouse and Black Game recently obtained in Breconshire; and a Glossy Ibis (*Ibis falcinellus*) lately shot in Devonshire. (2). It is also proposed to hold an exhibition of the larger fungi. Contributions are invited, and should be sent to the Society's Rooms not later than 2 P.M. on the date named.

THE NORTH PECKHAM AMATEUR CHRYSANTHEMUM SOCIETY.—The Hon. Secretary of this Society informs us that there is plenty of prize-money in the Society's coffers; and they hope—Chrysanthemums chiefly existing in order that gardeners and amateurs may compete for money-prizes—to get together a very fine show. The root idea may not be very high, but we have no doubt that success will attend their efforts, more especially as such attractions as a concert and a dance, all at the small price of 6d., are thrown in. Happy Peckhamites! Mr. G. BONE, 166, Summer Road, Peckham, S.E., is Hon. Secretary.

BIRCH-TREES DISEASED.—Writing in *Nature* of Oct. 18, Mr. ROBERT PAULSON mentions that the Birch-trees in Epping Forest have been attacked by a disease which causes them to die very rapidly. The disease is attributed to the presence of a fungus—*Melanconis stilbostoma*.

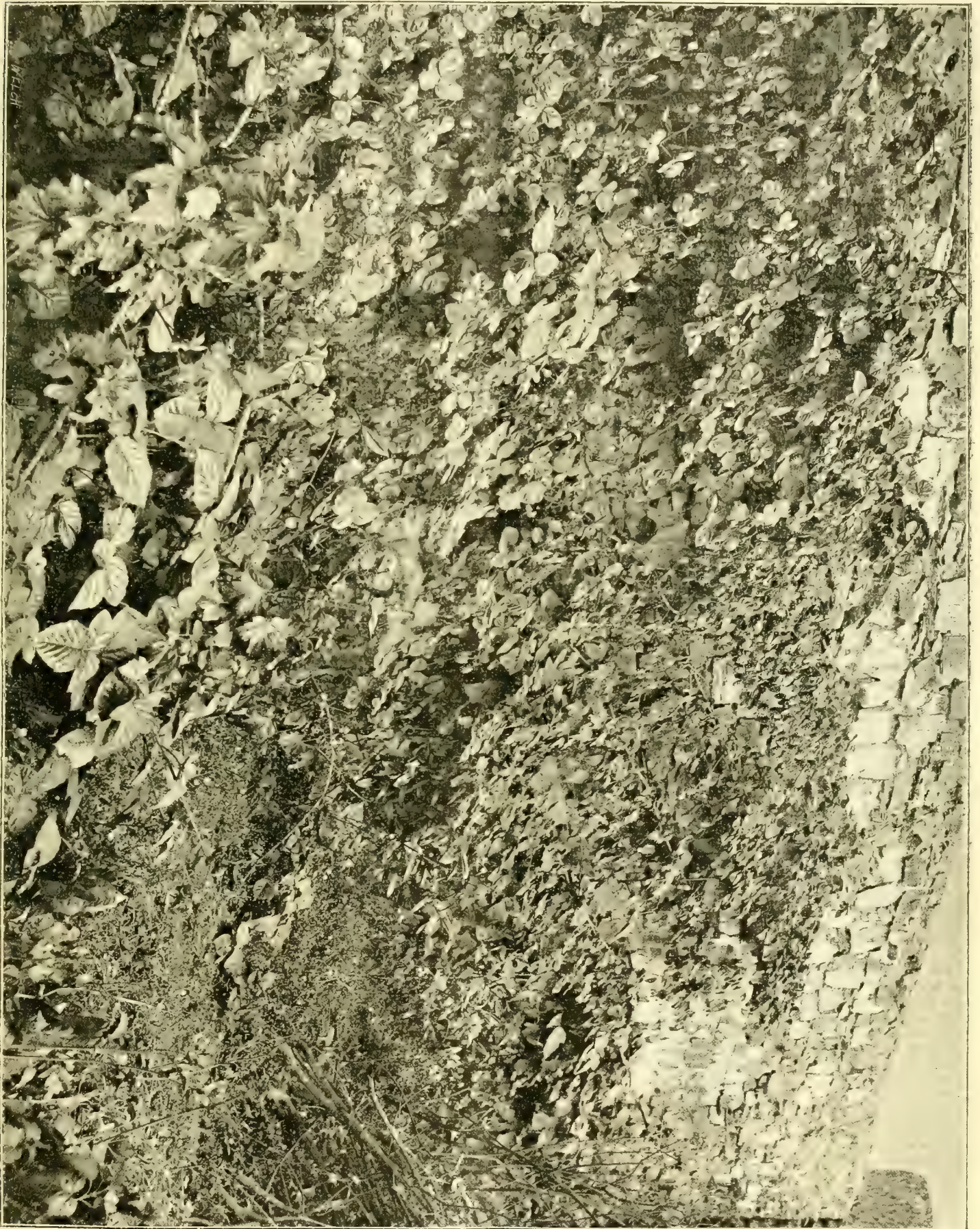


FIG. 93.—THE LONICERA GROWING IN THE GARDEN OF MR. G. H. WOOD, DOUTLAS, ISLE OF MAN. (SEE P. 309.)

DRIED FRUITS FOR CHRISTMAS.—Some folk have an idea that quite a heap of dried fruits can be had from the Cape to supplement the poor supply from Greece. It will interest them to learn that the industry is a very small one in the colony at present, and the total exports to the United Kingdom during 1899 were 420 lb., valued at £19.

FLOWERS IN SEASON.—From Mr. SMITH, Daisy Hill Nursery, Newry, we have received specimens of *Senecio spatulata*, an autumn-flowering perennial (3 to 4 feet high?); upper leaves sessile, lanceolate, coarsely-toothed, glabrous; flower-heads yellow, numerous, small, in loose corymbs. The *Kew Index* mentions a plant under this name as a native of "Australia," but whether this applies to Mr. SMITH's plant we cannot say.

PRUNUS LAUROCERASUS SHIPKAENSIS, also sent by Mr. SMITH, is a variety of the common Laurel-Cherry. It is described as almost prostrate in habit, and has shortly-stalked, narrow, lanceolate, acuminate leaves. The whitish flowers are in long racemes. It will be a valuable plant for planting on slopes and other situations, where its prostrate habit is desirable. The name *Zabeliana* is also attached to the plant.

"DAS PFLANZEN-REICH."—Under this title, Prof. ENGLER, the energetic director of the Berlin Botanic Gardens, has issued the first part of a "Conspectus of the vegetable kingdom." The elaborate *Pflanzen Familien* is barely finished before this new venture is launched. The *Pflanzen Familien*, it will be remembered, deals solely with the natural orders and genera of plants, and even with those limitations it runs into numerous volumes, richly illustrated, and wholly in the German language. The *Pflanzen-Reich* is intended to replace DE CANDOLLE'S *Prodromus*, and is to contain descriptions of all known species ranged under their natural orders. The task is prodigious, and few of the present workers can hope to see the finish. The work is published under the auspices of the Royal Prussian Academy of Science, with Dr. ENGLER as editor. The first instalment is before us, consisting of a monograph of the "Order Musaceae," by Dr. SCHUMANN, with sixty-two figures. The synonymy of the order is first given, from which we see that while Messrs. BENTHAM and HOOKER regard Musae as a tribe of Scitamineae, Dr. SCHUMANN is of opinion that the group ranks as a distinct family. A reference to the most important literature follows, from RICHARD to BAKER. These references include the morphology and minute anatomy. The characters of the order are given at length in Latin, for which students to whom German is not familiar will be thankful, though they will greatly regret that the information concerning the minute anatomy, biology, geographical distribution, is not also given in a "common" language. The classification and descriptions of the species are also happily in Latin and easily consulted, whilst the details relating to the uses are again written in German. Analytical tables are given whereby the individual species may be quickly determined, provided the specimens be sufficiently complete for identification. At p. 13 in the *Systema Familiae*, there is an apparent omission of *Strelitzioideae* after letter B, for the phrase as printed would lead the unwary to conclude that distichous leaves constituted one of the characteristics of Musa, which is clearly not what the author intended; nor was there ever a GREGORY III. on the throne of England (see p. 31). Such slips as these are quite inevitable in a work of such complexity, magnitude, and infinitude of detail. As a book of reference for systematic botanists, the *Pflanzen-Reich* will eventually be quite indispensable.

PROF. WITTMACK.—Though late in offering our congratulations to our distinguished colleague, we do so none the less cordially. We regret that our Berlin correspondents did not keep us informed of what was going on in order that we too might

have joined in the general chorus of congratulations. Dr. WITTMACK is a botanist of repute, and for twenty-five years has acted as secretary to the Royal Prussian Horticultural Society. The Society recognised the debt it owes to Dr. WITTMACK by presenting him with an address and two magnificent silver candelabra. Dr. WITTMACK has for several years acted as editor of the *Garten Flora*, as Director of the Agricultural Museum, and has contributed monographs on *Marcgraviaceae*, *Bromeliaceae*, &c., to Martius' *Flora Brasiliensis*, Engler and Prantl's *Pflanzen Familien*, and other publications.

THE GALVESTON DISASTER.—According to some figures given in the *Florists' Exchange*, the injury to florists' establishments in Galveston is estimated at over twenty-six millions of dollars. Five or six families of florists are known to have perished, together with the whole of their property.

DR. FRANK.—The *Garten Flora* gives a portrait and a sketch of the career of this distinguished botanist, who died on September 27. ALBERT FRANK was born in Dresden in 1839, studied in Leipzig, where he became curator of the herbarium and extraordinary Professor of Botany. He occupied himself originally with histology, but is most widely known by his excellent work on the *Diseases of Plants*, a new edition of which, in three volumes, appeared in 1895.

FRUIT EXHIBITION IN PARIS.—The *Salle des Fêtes* was devoted to this exhibition, which occupied forty-eight tables, each 25 mètres in length, and 2.50 m. wide. The *Revue Horticole* gives an illustration of this gigantic exhibition, and specifies the twelve Pears and the corresponding number of Apples selected as specially suitable for cultivation for market purposes. The Pears were:—

Bergamotte d'Espéren	Doyenné du Comice
Beurré d'Arenberg	" d'Hiver
" Bachelier	Duchesse d'Angoulême
" Diel	Louise Bonne d'Avranches
" Hardy	Passe Crassane
Curé	Williams'

The twelve Apples were:—

Beille de Pontoise	Court Pendu Plat
" Dubois	Grand Alexandre
Belle-fille Rose	Linneus Pippin
Calville Blanc	Reine des Reinettes
" Rouge d'Hiver	Reinette de Canx
" Saint Sauveur	" du Canada

The finest exhibit was that of Messrs. CROUX & SON, who exhibited about 600 varieties of fruit of different kinds.

SALVIA AZUREA GRANDIFLORA is the old *S. Pitcheri* of gardens, very well known, and admired for its beautiful blue flowers, of a tint perhaps nearer to Lavender than sky-blue. The species is seen in gardens very much less often than the showy *S. splendens*, and other species, but this is due probably to some question or other of cultivation, rather than to an indifference to the qualities of the blue-flowered species. It is certainly less easy to cultivate successfully than *S. splendens*. No one who may visit Kew in the near future should fail to see plants of *S. azurea grandiflora*, now blooming in the greenhouse (No. 4). They are magnificent specimens, 7 feet high, with very long inflorescences, and are among the most beautiful plants in the house, which is unusually gay at the present time.

THE LEGION OF HONOUR.—British horticulturists will learn with pleasure of the nomination of M. ALBERT TRUFFAUT of Versailles as Officer of the Legion of Honour.

LAPAGERIA ROSEA is a popular plant for training against walls, and under roofs of cool-houses. But in some districts the plant succeeds in the open, and in others that are not so warm it grows very well under glass porches that shelter the plant a little from the most severe weather. We have received from JOHN GWYNNE, Esq., Kenton Grange, The Hyde, London, N.W. (gr., Mr. A. Hornby), a growth which has developed a large number of trusses of blooms, some of which

trusses have six, five, and three flowers to each. The specimen is an instance of very free blooming, not uncommon in this species. The plant from which the growth was taken, is growing in a porch having a north-eastern aspect.

IRRITATION OF THE SKIN CAUSED BY KNIPHOFIA BLOOMS.—A lady recently returned from South Africa informs us that the flower of the "Red-hot Poker" plant is regarded by natives and foreigners alike as dangerous, by reason of the irritation of the skin and inflammation of the eyes produced, probably by the pollen. Have any of our readers any experience of this attribute of *Kniphofia*-flowers in this country?

CUT VERSUS UNCUT EDGES.—In connection with the vexed question of cut versus uncut edges, Mr. MURRAY thinks it may interest some readers to know that he has devised a means by which all books can have open and yet not smooth cut fore-edge and tail; and this with no more cost than that of trimming as at present. The numberless letters he has received on the subject in connection with the announcements of the first number of the *Monthly Review* forced him to consider the question. The result is attained by the simple expedient of so "imposing," that the "bolts" fold out (instead of in as formerly), and are opened by the circular trimming-knife acting in the usual way, but cutting off the closed bolts instead of the open edges. Mr. MURRAY hopes that now everyone will be satisfied, since the top will be smooth-cut to keep out dust, and enable the leaves to be turned readily, the fore-edge and tail open to satisfy the busy man, and yet left rough to please the eye of him who loves, and will now be entirely deprived of, the joy of the paper-knife.

THE WEATHER IN WEST HERTS.

ANOTHER cold week. On the coldest night, that preceding the 23rd, the thermometer resting on the lawn registered 6° of frost—making this the coldest night as yet of the present autumn. At 2 feet deep the soil is now at about a seasonable temperature, but at the depth of 1 foot it is about 2° colder than the average. Since the present month began rain has fallen on nine days, but to the aggregate depth of only three-quarters of an inch. Consequently the ground is now becoming very dry for the season, as is shown by the bare soil percolation gauge, through which no measurable quantity of rainwater has passed for ten days. During the week the winds have been light and the air dry for mid-autumn. The record of bright sunshine has been rather poor, the average duration only amounting to about two and a half hours a day. Here and there some of my Dahlias were slightly touched by the frost mentioned above, but the majority of the plants were altogether uninjured. *E. M., Berkhamsted, October 23.*

BOOK NOTICE.

TWIXT TOWN AND COUNTRY. A book of Suburban Gardening, by Roma White. (Harper & Brothers, 45, Albemarle Street.)

THIS is a delightful little book, written by one who loves her garden, and is in full sympathy with its occupants. The directions given for the preparation of the ground and the choice of plants are just what the ordinary resident in suburban villas requires. We are not sure, however, that the formation of a cloister, belted with a "tall and sumptuous" hedge is the best arrangement for a suburban back-garden of the ordinary dimensions. It would probably be too shady and too damp. The shade would be inimical to the flowers, and the damp would not conduce to the health of the household.

In spite of the great difficulties that often beset the suburban gardener, some spot that is not overlooked by neighbouring windows, can generally be contrived by judicious planting and judicious selec-

tion of plants, without the construction of a pergola or cloister, which are only suitable where space is more abundant. Ornamental Vines, Ivy-Rose arches, pillar Roses, clumps of Pampas Grass, specimen trees of *Thuja gigantea*, will supply nooks where one may sit and enjoy one's garden with a minimum of annoyance from neighbours who, it may be, are not neighbourly. The author, like so many amateurs, shows a tendency to exaggerate the difficulties of the nomenclature. Thus, she continues to speak of "Geraniums" when she means Pelargoniums, and apparently prides herself on doing so. In many cases it is indeed a matter of indifference, or of mere personal fancy what the name is to be, but in the instance in question, the case is one of wrong against right, of ignorance, perhaps wilful ignorance, against knowledge. In

Erica Fabiana, mentioned on p. 57, is probably *Fabiana imbricata*, which is hardy, except in very severe winters. The plant is superficially very heath-like, but really it is widely different, belonging to the *Solanum* family. What the "Coral Hyacinth" may be we cannot tell, nor does the Index help us. Can it be the curious Feather-Hyacinth? We share our author's feeling that Roses should not be allowed to monopolise the beds in which they are grown, unless indeed the ultimate aim is the exhibition-table.

The book is full of suggestions, and permeated with humour and a literary flavour that are very refreshing. Of certain London squares it is said that these "extensive pleasure-grounds" should be thus advertised: "Earnest horticulturists convicted of sin will find these enclosures to be admir-

STAPELIA GIGANTEA.—This rare species is now in flower here, after we have waited for years. The treatment afforded the plant has been altered from time to time. The flower is 12 inches in diameter, and as soon as it was fully expanded flies were attracted. In shape it is like a star, and the colouring is most singular and beautiful. This year the plant has been grown near to the glass in a stove, and this hot, dry treatment has apparently produced the success. *A. Wilson, Cherkley Court Gardens, Leatherhead*. [See illustration in *Gard. Chron.*, December 22, 1888, p. 729. Ed.]

PHYSALIS PERUVIANA IN THE OPEN GARDEN.—Let me supplement Dr. Bonavia's note on this *Physalis* in your last issue. I have grown them now for some years successfully in the open garden. I obtained my seed from Sada di Milan, it is the *Chichingero* of the cafes and restaurants of Lombardy and northern Italy; the plants are very robust, growing about 3 feet high, and about 6 feet through, and they set an immense quantity of fruit, far more than with their dense foliage they can ever ripen. I have no doubt that if they were vigorously thinned and trained to a light wire lattice, far more ripe fruit would be secured. We treat them from the seed stage as Tomatoes for out-of-doors. We have been picking ripe fruit now for about two months. I enclose a few for your inspection. *Robt. P. Sheldon, The Rosery, Twynford, by Winchester, October 20, 1900.* [Very good in flavour. Ed.]

HEMP-GROWING—With reference to a review of a treatise on *Hemp*, by Mr. S. S. Boyce, of New York, which appeared in the *Gardeners' Chronicle*, October 6, may I point out that the practicability of raising Hemp-crops in this country has been determined by numerous farmers in Cambridgeshire and Lincolnshire in recent years. A company with which I was connected in its moribund stage, was formed with the object of encouraging the growth of Hemp and Flax by contracting with farmers to grow these staples, the company then intending to treat the raw material by reeking it and extracting the fibre in a marketable form. The scheme failed for reasons into which I will not enter at length, because they were mainly based on ignorance and miscalculations respecting this subsequent treatment; but so far as the Hemp itself was concerned, the fact was clearly brought out that not only could it be grown even too luxuriantly, but that the fibre produced was far above the average tensile strength. I send herewith a photograph showing part of a crop which was grown in the Fens, and in many cases reached a height of 10 or 11 feet. The produce, however, varied enormously on different lands and in different hands, so that in many cases, the "strain" was little larger than Corn-straw. Experience showed that a medium size, as thick as one's little finger and 5 or 6 feet high, gave the best results; the stronger growth shown in the photograph being mainly wood and pith, with a relatively small percentage of external fibre. This, of course, involved much extra labour in handling and treating generally, and moreover the large size and tough woody nature necessitated specially strong machinery. Unfortunately, two years' crops were contracted for before any machinery was provided, or even contrived for its treatment, and furthermore the various grades were stacked together as they came in, the result being a practical impossibility to deduce any clear data regarding the relative out-turn. It would, however, appear that on the average one-fifth of the straw comes out as marketable fibre in the shape of long Hemp proper, and shorter tows of less value. Owing also to the irregularity of the crops, the proportion of seed was a vague factor, especially as stacking for two years prior to use led to great loss by vermin and birds, and general shedding in the handling. The presence of seed rendered the female plants less productive in long fibre, owing to the tendency to branch into separate panicles at a short distance from the ground; the seed, however, was of first-rate quality, and fetched full market prices. The main obstacle to the successful carrying out of the scheme was the impossibility of extracting the fibre by cheap peasant hand labour, as is largely done abroad, and the difficulty of contriving machinery which would clear away the wood effectively without breaking the fibre, and thus increasing the percentage of tow. The reeking in tanks, too, was found to be a cumbrous and detrimental process, and in the end the whole of the subscribed capital was frittered away in all but fruitless experiments. Those, how-



FIG. 94.—*COFFEA ROBUSTA*. (SEE P. 303.)

such a case, there can be no question with right-minded people what is the proper course to follow when once they have satisfied themselves of the right or wrong of the names. It is difficult sometimes to arrive at this latter conclusion; for instance, at p. 43, mention is made of a lovely shining evergreen, with pink flowers, called *Ozaria*. What this can be we cannot guess. It can hardly be *Olearia*, for that has creamy-white flowers. We cordially agree with the writer as to the use of *Skimmias* as dwarf ornamental evergreens for town gardens; here again the question of nomenclature turns up. *Skimmia oblata* is really the true Japanese *S. japonica*, and its male variety hardly differs, if at all, from the female, except indeed in the case of the flowers. It is delightful to hear that *Azalea mollis* succeeds so well in smoke and shade, and it is pleasant also to hear the writer admiring and decanting on the beauty of many of the flowering shrubs which are so strangely overlooked.

able penitential resorts." Mr. Browne, the superintendent of the Central Parks of London has supplied a list of plants and shrubs successfully grown in Hyde Park; whilst the frontispiece represents the pretty garden at the Bank of England.

HOME CORRESPONDENCE.

SWEET PEAS.—It is, I think, usual to sow Sweet Peas in succession to obtain late flowers, but I have found that those (late) flowers may be obtained from the April or May sown Peas, when these are kept carefully cut over, so as to remove or prevent formation of all seed-pods. Until very recently I have cut plenty of flowers from two short rows treated in this way, and which were sown in April or early May, and last year I cut flowers well into November from plants treated similarly. *Rus in Urbe.*

ever, who have followed the matter carefully, are persuaded that, given crops intelligently grown, that is of fairly even description, with the system of reeking finally adopted, and the machinery finally devised, first-class Hemp-fibre could be produced in this country at a marketable price, and with great advantage to the farmer. This advantage consists largely in the fact that the Hemp can be sown in April and reaped in August; the fear that it might prove exhaustive to the land has not been justified, the abundant leafage clears the land of weeds by deprivation of light, and in many ways it has been demonstrated that its culture can be conducted profitably. Its reduction to fibre, however, must be effected in the vicinity, as carriage to any distance involves prohibitive expense. Chas. T. Drury, F.L.S., V.M.H.

SESSILE AND PEDUNCULATE OAKS.—Mr. A. C. Forbes states that in Germany the pedunculate Oak shoots later than the sessile Oak, but the opposite appears to be the case in France. In *Les Forêts*, the recently published French sylvicultural text-book, it is stated "Le pédonculé, qui entre en végétation plus tard que le rouvre (*Q. sessiliflora*) est moins exposé aux gelées printanières." It is time that we had experimental stations in the British Isles for our own fruit-trees, instead of always being obliged to refer to continental authorities. There is a European variety of pedunculate Oak (*Q. tardiflora* or *tardissima*), that shoots about a month later than the ordinary variety, and thus escapes all danger from spring frosts. Acorns of this Oak reproduce the variety perfectly. I enclose two drawings from a pamphlet by Gillardoni, a French conservator of fruits, which show the two Oaks at different ages. The chief question I have raised, apart from any so-called specific differences between the Oaks, is whether the sessile Oak should be planted on hill-sides that are too dry for pedunculate Oak, but yet moist enough for the former? On this question Continental authority is unanimous in my favour. There are sites in the Ardennes where both Oaks grow equally well, and there are doubtless such sites in Britain; but to plant pedunculate Oak on a comparatively dry hill-side is considered bad forestry in France. The fact that the mountain limestone in the Peak does not suit pedunculate Oak, and does suit sessile Oak, is patent to anyone who will visit the Chatsworth Woods. I have tried to explain the reason for this on physiological grounds, and shall be very glad to hear of any other sites in the British Isles where the two Oaks are growing side by side, with a few notes on their age, condition, and the nature of the soil and gradient. W. R. Fisher.

THE TWO BRITISH OAKS.—This is a very old story. The late Prof. James Buckman, in his *Science and Practice of Farm Cultivation* (1865), refers the British Oaks to three varieties, viz: 1, *Quercus robur* pedunculata; 2, *Q. sessiliflora*, *Salisbury*; 3, *Q. intermedia*, *Don*. Buckman believed these to be only varieties of *Q. robur*, of Linnaeus. He also figures, and describes 1 and 2, and alludes to 3 as being intermediate between them, although as he says "without the fruit it is extremely difficult even to distinguish it as a variety." Buckman describes *Q. pedunculata* as the typical British Oak, and says that, "it is readily distinguished in trees from others by its robust habits, thick, gnarled, twisted, and more or less horizontally inclined branches." He further says "that nearly every historical Oak is of the pedunculate variety. In the Holt Forest are still left some huge examples; the same in the Dean Forest, and Braydon, near Swindon, Wilts, though disforested, can yet show noble trees of this form." "Indeed," he adds, "throughout England it is difficult to meet with examples of any other form. *Q. sessiliflora*," he says, "may be generally described as of a more upright and formal habit. Limbs straighter, and less gnarled. Bark usually smoother than the former. The leaf has many sinuities, and is set on a comparatively long (2 to 4 inches), foot leaf-stalk, or petiole." The fruit (acorns), on the contrary, is so nearly sessile that it may be said to have little more than the indication of a peduncle, or stalk. The sessile-fruited Oak does not usually attain the huge dimensions of the pedunculate form; but, on the other hand, we incline to the belief that it grows more rapidly, and is best adapted for a lighter soil than the latter. There are conditions which might, to a

greater or less extent, affect the quality of its timber, but we do not think that there is much difference in this respect. "We believe that their wood has been used indifferently, and the quality is influenced by surrounding circumstances," Selby, in his *British Forest Trees*, p. 249, figures and describes both varieties, and says, "Our own opinion is, that there is not any such material difference between the qualities of the timber of the two trees as has been asserted by some; but that inferior timber is occasionally produced by each variety—the result, perhaps, of some original constitutional defect, or arising from the nature of the soil, situation, or other local peculiarities of the ground upon which the timber was raised. Such, at least, is the result of our own experience, as we have met with Oak of the peduncled kind, with timber possessing all the inferior qualities attributed to, and supposed to be possessed exclusively by *Quercus sessiliflora*." Buckman says that it is difficult to meet with large examples of *Q. sessiliflora*; but he alludes to the Flitton Oak in Devonshire, and to those in Wyre Forest, Worcestershire, and also to those in the New Forest, where this short-stalked variety is more generally found. The timber of the two varieties is different in colour and in grain, and that of *Q. sessiliflora* has not unfrequently been mistaken for that of the Spanish Chestnut. Now that this question has been raised, we should like to have the views of practical foresters, timber-merchants, and builders, on this subject. Does *Q. pedunculata* grow best in low and damp situations? Does *Q. sessiliflora*, on the other hand, thrive best in high and dry places? And is it worth while so late in the hey-day of British Oak-growing, to insist on a distinction being made? Of course, supposing it is true that the two varieties of British Oak do thrive best in different soils and situations, and we have any choice in the matter, it would be unwise not to take all due advantage of the fact when planting. B.

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 23.—A meeting of the committees of this Society was held in the Drill Hall, Westminster, on Tuesday last, when there were shown a number of exhibits, that together furnished the Hall rather less fully than was the case on the previous occasion. Orchids, however, were shown more numerous than for some time past, and amongst them were several valuable novelties. The tender flowers from out-of-doors, such as Dahlias, &c., which have been shown until this meeting, have now, it seems, passed from exhibition quality, but blooms may still be cut in gardens near London. There were some Roses exhibited presumably from out-of-doors, and their freshness and quality were exceptional. Chrysanthemums formed the feature of that part of the exhibition with which the FLORAL COMMITTEE had to do, and of these were four groups of plants in pots, and a large number of exhibits of cut flowers. Thirteen Awards of Merit were recommended by this committee, and in ten cases these were to varieties of Chrysanthemums. The other three Awards were to a beautiful variety of New Zealand Veronica, a new H.T. Rose, named Lady Battersea; and a variety of the common *Scopolandrium*.

THE FRUIT AND VEGETABLE COMMITTEE had before it several collections of fruit, and awarded three Cultural Commendations, one First-class Certificate to the Glastonbury Pear, and an Award of Merit to a Seedling Melon of exceptional flavour.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. C. T. Drury, R. Dean, G. Reuthe, Jas. Hudson, H. B. May, John Jennings, J. F. McLeod, H. Turner, W. Howe, J. D. Pawle, Geo. Gordon, Chas. E. Shea, Jas. Walker, H. J. Jones, W. J. James, E. T. Cook, E. H. Jenkins, Geo. Paul, and J. Fraser.

Messrs. H. CANNELL & SONS, Swanley, Kent, made a great display of Cannas in pots, quite as well bloomed and as bright as they were when exhibited in the summer months. Of yellow-flowered varieties Buttercup is a very pretty form; others that are yellow, or nearly so, are Burbank, very large, but much too flimsy; Madame Pichon, Reichskanzler, Fürst Hohenlohe, Aurea, Semaphore (rich apricot colour), and Duchess of York. Of the red and crimson-flowered varieties the more noticeable were Madame Crozy, Amy Chantini, A. Bouvier, Prof. Gerard, Triumph, Milne Redhead, Jas. Wigan, Sam Trelease, Souvenir d'Antoine Crozy, &c. This very bright group was edged with fine bunches of *Gypsophila* (Silver Flora Medal).

Retarded Lilies of the Valley were illustrated by an exhibit of plants in bloom in pots, from Mr. THOS. ROCHFORD, Turnford Hall Nurseries, Broxbourne, Herts. The blooms were quite strong enough to prove the superiority of this system of

retarding the crowns of Lilies to the practice of forcing improperly-matured plants at a very early date. And what applies to the Lilies in this respect is equally appropriate to *Spiraeas*, *Lilium longiflorum* Harrisii, and *Mollis* Azaleas, which were also shown in bloom by Mr. ROCHFORD (Silver-gilt Banksian Medal).

Mr. H. B. MAY, of Dyson's Lane Nursery, Upper Edmonton, again showed the exceeding decorative value of *Begonia Gloire de Lorraine*, and of *Adiantum Farleyense*, both of which plants were shown grandly, neither being less remarkable than the other, and both were shown in large quantity (Silver Flora Medal).

Fernettys were finely shown by Messrs. W. CUTBUSH & SON, Highgate, N., and Barnet, Herts, who had groups of plants of several varieties, all of them being exceptionally freely "berried." The most showy of them is the variety *P. mucronata alba*, which has extra large berries of very pale tint nearly white; *elegans* has rosy-red, and *macrocarpa* pale mauve coloured berries. There were also varieties named *lilacina*, and *purpurea*. *Skimmia japonica* was well shown among the other plants, but we failed to discover the *Ardisia*, which in other days was always included in such groups of "berried" plants (Bronze Flora Medal).

Roses were again shown by Mr. GEO. PRINCE, of Oxford, exhibited in his usual decorative method, and most of them over a ground-work of black velvet. The blossoms were almost as good and as fresh as Roses were two months ago, and the varieties were Maman Cochet, and White Maman Cochet, two of the most lovely there are (Silver Flora Medal).

Rose Sunrise from Mr. G. W. PIPER, Uckfield, was very rich in colour.

Messrs. J. FEED & SON, West Norwood, London, S.E., showed a group of *Begonias semperflorens* in pots. There were numerous varieties, and variously coloured flowers.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited some delightful *Streptocarpus* of a new strain, that we noticed at the last Temple Show. The colour tints in these flowers are as attractive as they are numerous. The greenhouse hybrid *Rhododendrons* were also shown by Messrs. VEITCH, who had pretty blooms of a number of varieties. Also a plant of *Cotoneaster pannosa*, with dull coral-red berries.

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., showed a group of hardy flowers as usual, but on this occasion it consisted almost exclusively of the early flowering, or border varieties of Chrysanthemums, and these were shown in considerable variety. The other species included some varieties of the perennial Aster, also *Kniphofia Triumph*, shown at the last meeting, and others; fine fruiting growths of *Leycesteria formosa*, *Polygonum Sieboldii compactum*, *Crataegus pyracantha Lelandi*, *Pentstemons*, and forced plants of the Roman Hyacinth, &c. (Bronze Flora Medal).

Some beautiful hybrid Nerines were shown by H. J. ELWES, Esq., Andoversford.

A collection of autumn-flowering Veronicas came from LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton, gr., Mr. Jas. Hudson. Plants lifted from the open ground were shown of "Diamant" and *Reine des Blanchés*; to the former an Award of Merit was awarded; the latter is pure white, and free-flowering. Cut examples from the open were also staged of *V. La Séduisant*, velvety crimson; *V. Hendersoni*, a large blue form; *V. Andersoni*, an old well-known variety; *V. La Merveilleuse*, a deep pink, habit close; *V. Purple Prince*, a blue-purple, of smaller growth; and *V. La Ciel*, a sturdy blue variety.

CHRYSANTHEMUMS.

A group of Chrysanthemum plants, interspersed with *Codiaeum* and other ornamental foliage plants, from Mr. R. C. PULLING, Monkham's Nurseries, Snakes Lane, Woodford, Essex, was very commendable, and many of the blooms were of distinctly good quality. Among the varieties shown were Annie Prevost (white), Edith Dashwood (pink), Mrs. A. H. Hall, Miss Alice Byron, Soleil d'Octobre, Mrs. W. Cursham, Pride of Madford, &c. (Silver-gilt Banksian Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, had a remarkably attractive group of Chrysanthemums in pots. The plants were arranged closely together, and without any ornamental foliage species. Most of the more popular varieties were represented in this exhibit, and the quality of the blooms was much better than might be expected from so urban a district. All the varieties were of the Japanese or Japanese incurved types. Some of the most prominent were the following:—Mutual Friend, Annie Prevost, Little Nell, Miss Nellie Pockett, Miss Elsie Teichmann, Miss Alice Byron, Lady Byron, all white flowers; Oceana, Soleil d'Octobre, Phœbus, Le Grand Dragon, William Towers, Admiral Avellan, and R. Hooper Pearson, yellow flowers, the last-named being much the richest in colour; James Bidecove, Mrs. Coombes, N. C. S. Jubilee, Rayonante, pink or rose colour; and President Armand, Reginald Godfrey, William Seward, and Henry Weeks among the high-coloured flowers (Silver-gilt Banksian Medal).

Mr. DROST, nurseryman, Richmond, showed a large group of Chrysanthemums in pots of the variety Soleil d'Octobre. The plants were scarcely 2 feet high, bore foliage down to their base, and some of them had as many as sixteen flowers. Another group of similar plants from the same exhibitor were of the variety Madame Gustave Henry. Both of the varieties are evidently of very great merit for cultivation as decorative plants (Silver Flora Medal).

Of cut blooms of Chrysanthemums the most prominent exhibit was one from Mr. NORMAN DAVIS, of Framfield Nurseries, Sussex, who arranged a very attractive collection

upon one of the central tables. The method of arrangement adopted was similar to that which this exhibitor has practised for several seasons, and the huge blooms that were shown in the large but ornamental vases were as large as ever. By displaying the blooms in such a manner, and relieving them somewhat by the use of a few coloured leaves and sprays, they are afforded every advantage possible, and are always attractive. Some of the many varieties that were noticed in this exhibit were Miss Alice Byron, a white Japanese (new); Mrs. Coombes, Mrs. Barkley, shown grandly; Edwin Molyneux, Mrs. White Popham, Phœbus, and others. The sub-committee of the Floral Committee recommended an award of a Silver-gilt Medal, for which a Gold Medal was afterwards substituted.

Mr. W. J. GODFREY, Exmouth Nurseries, Devon, had a large collection of exhibition blooms, which gained a Silver Flora Medal. Three of these varieties were recommended Awards of Merit, and besides were noticed excellent flowers

Veronica "Diamond."—A rich rosy crimson flowered variety, very free-flowering upon dense and long racemes, and possessing a sturdy habit of growth. Very distinct, and one of the very best. From LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. J. Hudson) (Award of Merit).

Chrysanthemum Charles Longley.—An Australian seedling Japanese rich rosy-purple colour with silvery reverse. From Messrs. W. WELLS & Co., Ltd. (Award of Merit).

C. Earl of Arden.—This is a very good yellow Japanese, and an English seedling. From Mr. PERKINS, Greenlands Gardens, Henley (Award of Merit).

C. J. R. Upton.—A very fine yellow Japanese, shown before the National Chrysanthemum Society last year. From Mr. W. J. GODFREY (Award of Merit).

C. Lily Mountford.—From Mr. GLEESON, Warren House Gardens, Stanmore. See p. 315, col. A (Award of Merit).



FIG. 95.—BAMBURANTA ARNOLDIANA. (SEE P. 303.)

of W. Cursham, Lady Ludlow, Florence Molyneux, and many others; also a few good seedling varieties we have not observed previously, as Loveliness, a yellow Japanese, and Godfrey's Masterpiece, &c.

Another collection of cut-blooms came from Messrs. W. WELLS, Ltd., Earlswood Nurseries, Redhill, Surrey, for which a Silver Banksian Medal was awarded. There was a number of excellent seedlings in this exhibit, and most of them were of Australian origin. One of these, Charles Longley, is mentioned under Awards. In addition to these there were very large blooms of Jane Molyneux, W. R. Church, Sir George White, &c.

Of smaller collections there were several exhibited, and the best varieties will be found included in the list of those which were recommended Awards of Merit.

Awards.

Rose Lady Battersea.—A very deep rose-coloured Hybrid Tea variety, almost red. It is a very bright flower, and the variety is said to be a good grower and bloomer. From Messrs. PAUL & SON, The Old Nurseries, Cheshunt (Award of Merit).

Scolopendrium vulgare var. Stansfieldi.—A very remarkable variety of the common Scolopendrium. From Mr. C. T. DRURY, Shaa Road, Acton (Award of Merit).

Chrysanthemum Master E. Seymour.—From Mr. PERKINS, Greenlands, Henley-on-Thames. See p. 315, col. A (Award of Merit).

C. Matthew Russell.—A true incurved bloom of some depth. From Mr. H. J. JONES. Colour bronzy-yellow (Award of Merit).

C. Mrs. Coombes.—A well known, large-flowering reflexed Japanese; deep pink colour. From Mr. W. J. GODFREY (Award of Merit).

C. Mrs. Emma Fox.—A reddish-coloured Japanese variety with buff reverse. From Mr. W. SEWARD, Hanwell (Award of Merit).

C. Mrs. F. Gray Smith.—From Mr. W. J. GODFREY. See p. 315, col. A (Award of Merit).

C. Mr. S. Fryett.—A rosy-purple Japanese with silver-coloured reverse. From Mr. W. SEWARD (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), J. G. Fowler, de B. Crawshaw, H. Ballantine, H. Little, J. Gabriel, H. J. Chapman, W. H. Young, J. W. Potter, H. A. Tracy, T. W. Bond, E. Hill, J. Douglas, T. Rochford, W. Cobb, H. M. Pollett, and J. Colman.

Sir FREDERICK WILAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), staged an effective group made up of some very good varieties of *Dendrobium Phalenopsis* *Eschrodianum*, varieties of *Cattleya labiata*, and excellent examples of *Laelia pumila*. With them were *Dendrobium gigibbum*, *D. x Lecanum atropurpureum*, *D. formosum giganteum*, a light form of *Laelio-Cattleya x Henry Greenwood*, plants of *Stenoglottis longifolia*, *Cypripedium x Wiganianum*, *C. x Allianium*, *C. x Muriel Hollington*, *C. x Helen* (Dayana *x Charlesworthi*); *C. x Pollettianum*, *Cattleya x Macraei*, *C. Bowringiana*, *C. Warscewiczii*, &c. (Silver Flora Medal).

R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell (gr., Mr. H. J. Chapman), showed a very interesting lot of *Cypripediums*, the most remarkable of which were *C. x Vidor* (Chas. Canham *x Lecanum superbum*), a grand hybrid, which secured an Award of Merit; and the home-raised *C. insignis Sandere*, noted at p. 302. Other good varieties were *C. x Mrs. F. L. Ames* (tonsum *x Fairieanum*), *C. x Regina* (Lecanum *x Fairieanum*) (*C. x Niobe* (Spicerianum *x Fairieanum*), *C. x H. Ballantine* (purpureum *x Fairieanum*), and *C. x Arthurianum* (insigne *x Fairieanum*), constituting a very interesting set of *Fairieanum* crosses, rendered dissimilar by hybridisation, but each preserving unmistakable characters of the *Fairieanum* parentage, and having a similar time of flowering. Others in the group were *C. x Lachense*, and *C. x mixta*, both good (Silver Banksian Medal).

Messrs. HUGH LOW & Co., Bush Hill Park, were awarded a Silver Banksian Medal for a group of good *Cattleya labiata*, *C. x Portia*, *Laelio-Cattleya x exoniensis*, *Laelia pumila*, *Oncidium Forbesii*, *O. varicosum*, *Catasetum callosum*, &c. The centre plant was a grand specimen of a superb variety of *Cattleya bicolor*, with five spikes of very fine flowers (Silver Banksian Medal).

Messrs. CHARLESWORTH & Co., Heaton, Bradford, staged a small group, in which were two very fine specimens of *Aerides Lawrencei*: three of their new *Cattleya x Jobb Baguley* (Hardyana *x Bowringiana*), a very pretty hybrid of the same general appearance as the favourite *C. x Mantini*. The flowers varied in their tints, the darkest having purplish-rose sepals and petals, and labellum with a bright yellow disk, and purplish-crimson front lobe, and margins to the side lobes. Associated with these was the brilliant, deep scarlet-hued *Sophro-Laelia x Eros*, which took the only first-class Certificate awarded at the meeting.

W. M. APPLETON, Esq., Tyn-y-Coed, Weston-super-Mare, showed *Cypripedium x Lady Roberts* (Harrisianum *x superbum x niveum*), with finely-shaped white flowers, tinged with rose-purple; two varieties of *C. x Sir Redvers Buller*, neither equal in quality to the original illustrated in the *Gardeners' Chronicle*, January 20, 1900, p. 43. This exhibitor had also *Dendrobium Phalenopsis 'Brilliance'*, with white bases to all the segments, the rest of the flower being of a brilliant carmine-rose colour.

Sir JAS. MILLER, Manderston, Duns, N.B. (gr., Mr. Jas. Hamilton), sent out spikes of two varieties obtained between *Cattleya bicolor* and *Laelia Dayana*. As with other *C. bicolor* crosses the form of that species, and especially its curious labellum, was strongly indicated; sepals and petals varying from cream-white tinged with purple to rose colour. The extraordinary labellum of a claret-purple tint, has a white base. *C. maxima x C. Gaskelliana* was also sent, the flower closely resembling a pale coloured *C. maxima*.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House (gr., Mr. Jas. Hudson), sent an inflorescence of a fine form of *Laelia Perrini*.

M. JULES HYE LEYSEN, Ghent (gr., M. Coen), sent a flower of *Cypripedium x Mandie callosum Sandere x Lawrenceanum Hyeanum*, with white and emerald-green flowers, preserving the albino character of both parents, but in form closely resembling *C. callosum Sandere*.

D. M. GRIMSDALE, Uxbridge, sent spikes of *Odontoglossum crispum*, *Oncidium Forbesii*, and *Cypripedium Charlesworthi*.

Messrs. JAS. VEITCH & SONS, Chelsea, showed a noble plant of *Cattleya Bowringiana*, Veitch's variety, with three spikes of twenty, twenty-seven, and thirty flowers respectively, each of large size, and of a dark tint of bright rose-purple, the whole of the labellum being finely coloured by a darker tint than the other segments (Cultural Commendation).

Messrs. HEATH & SON, Cheltenham, showed a very large-flowered *Dendrobium formosum giganteum*, and a good plant of *Vanda coerulea*.

C. H. FEILING, Esq., Southgate House, Southgate (gr., Mr. Stocking), showed a pretty hybrid of uncertain parentage, but probably a form of *Cattleya x Massiliensis* (Trianæi *x Dowiana aurea*), the *C. aurea* scent being very pronounced. Sepals and petals cream-white, with purple tinge. Lip ruby-purple, with very fine golden lines in the centre.

HENRY LITTLE, Esq., Baronshalt, Twickenham (gr., Mr. Howard), showed a fine form of *Laelio-Cattleya x Tiresias* (*C. Bowringiana x L.-C. x elegans Turneri*), a fine *Veitchiana* hybrid that was certificated in 1896. The Committee resolved to have a drawing made of it. Flowers somewhat resembling *C. Lawrenceana*, bright rose-purple, with darker labellum, which is white at the base. Mr. LITTLE also showed two good *Cattleya Bowringiana* and *C. aurea*.

Messrs. F. SANDER & Co., St. Albans, showed a small group of interesting hybrid *Cypripediums* and *Cattleya Loddigesii*.

Awards.

Cypripedium x Vidor (Chas. Canham *x Harrisianum superbum*).—From R. I. MEASURES, Esq. A large and finely-formed flower of rich dark colouring. Upper sepal broad and flat, the greater part of its area of a dark chocolate-purple, with pure white margin, inside of which on the upper portion an emerald-green shade is observed. Petals and labellum tinged with light purple (Award of Merit).

Dendrobium × *Leucantheum* *atro-purpureum*.—From Sir FREDK. WIGAN, Bart., is much darker than the type which was illustrated in the *Gard. Chron.*, Nov. 28, 1891, p. 641. Flowers purplish-rose, with dark claret-purple labellum. Like the original, it was imported with *D. Phalenopsis Schroderianum* (Award of Merit).

Dendrobium *Novae*.—From Sir FREDERICK WIGAN, Bart. A pretty little species from Lorr Howe's Island. Flowers white, in ascending racemes (Botanical Certificate).

Odontoglossum crispum *Maud Richmond*.—From Mr. T. RICHMOND, Tarnford Hall, Broxbourne. A charming spotted variety of middle size, and the markings which are arranged on the inner halves of the segments, remind one of *Odontoglossum Pescatorei Veitchianum*. Flowers somewhat resembling those of *O. × Adrianae*, especially the labellum, which is white, evenly blotched except the tips with purple (Award of Merit).

Sigheo Lelia × *Eros* (*Lelia*-*Cattleya* × *elegans* *Turneri* × *Siphonitis grandiflora*), from Messrs. CHARLESWORTH & Co., Heaton, Bradford. One of the finest coloured crosses yet raised. Flowers of good size, and firm, wax-like texture; bright, dark scarlet. Base of lip yellow, with scarlet lines. The front lobes of the lip bears a good resemblance to some of the forms of *L. C. × elegans* (First-class Certificate).

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., in the Chair; and Messrs. W. WILKS, H. Eslings, Jas. H. Veitch, A. H. Pearson, M. Gleeson, W. Pope, A. Dean, S. Mortimer, C. Herrin, W. Bates, H. Markham, Geo. Wythes, Geo. Woodward, Jas. Smith, F. Q. Lane, G. Reynolds, G. Norman, Jos. Cheal, and H. Somers Rivers.

Fruits did not form a considerable feature on this occasion, although much of that which was exhibited was of good quality. Especially noticeable were some Apples grown by Mr. ROUELL, Esq., Harvey Lodge, Roupell Park, S.E., and therefore within five miles of Charing Cross. What Mr. ROUELL can obtain from his uncongenial soil on Streatham Hill is proof sufficient that hardy fruit can be well grown in many town gardens if pains be taken in preparing the soil and replanting the trees, and if due care be bestowed on the trees in the way of spraying, mulching, feeding, and pruning. The samples of Newton Wonder were capital, some of the fruits weighing 2 lb., and all were entirely free from skin blemishes. Those of Cox's Orange Pippin were above average size, and could scarcely be excelled. The ticket informed us that half an bushel of fruit was gathered from a small bush growing out-of-doors (Cultural Commendation).

A number of single dishes of Apples were shown by various exhibitors, including a large kitchen variety by Messrs. J. CICAL & SONS, Crawley, named Cowan's Victoria, a soft-fleshed angular fruit: Apples, Raimboul Franc, was shown by Mr. W. STRUGNELL, gr., Road Ashton.

Fruits of Winter Quoining were shown by HOWARD CHAPMAN, Esq., The Gulls, South Darenth, Kent, taken from the parent-tree. They were small and ill-favoured, the produce, evidently, of an aged tree.

Mr. J. R. Cuckney, gr. to Earl DARNLEY, Cobham Hall, Gravesend, received a Cultural Commendation for a quantity of Cox's Golden Drop Plums, shown in fine condition.

Mrs. MALTBY, Botley, Hants (gr., Mr. Mathews), received a Cultural Commendation for twenty-four fruits of Beurré Diel Pears, of large size and unblemished appearance, gathered from an aged tree, which had been converted from a horizontal to an upright trained one, a proceeding that had rejuvenated the tree. Seedlings from Apple Lord Suffield, and various Pears were shown, but failed to please the Committee.

Messrs. C. BENYARD & Co., Maidstone, showed a wonderfully fine representative collection of seventy-five dishes of Pears, mostly clean fruits, and large of their kind. We remarked the Striped Comice, Gigli, Bellissime d'Hiver, a good culinary variety: Emile d'Heyst, Beurre Superfin, Directeur Hardy, Doyenné du Comice, Dr. Joubert, President D'Ormonville, very fine Beurré Fouquier, Darondeau, Marie Benoist, Fondante Thirriott, Beurré Ballet, Princess, Beurré Jean Van Geert, &c. (Silver-gilt Knishtian Medal).

Messrs. J. CICAL showed seventeen dishes of Apples, new or but little-known varieties, including Beauty of Stoke, Ottershaw Pippin, Walthamstow Beauty, Chelmsford Wonder, Armorsl, Emily Childs, Nancy Jackson, Hooper's Seedling, Jubilee, &c.

Mr. W. TAYLOR, Osborn Nursery, Hampton, Middlesex, showed six bunches of Grape Reine Olga, a red variety, coming from Germany. It has a pleasant, sweet flavour, and ripened well out-of-doors this year. The variety has been seen in previous years at the Royal Horticultural Society's meetings.

Messrs. HARRISON & SONS, Leicester, exhibited a collection of varieties of Onions of last spring's sowings. Extra fine samples were noted in Improved Nuneham Park, Banbury Cross, Nuneham Park, Up-to-Date, Deptford, The Lord Keeper, Strasburg, Bedfordshire Champion, Brown Spanish, Danver's Yellow, Giant Zittau, Improved Reading, Somerset Hero, Ailsa Craig, and Excellent.

Dr. E. BONAVIA, Westwood, Worthing, showed a collection of Gourds; as also did Messrs. PEARCE & Co, 119, Dundas Street, London, Ontario. The fruits were such as are seldom met with in English gardens.

Messrs. OSMAN & Co., Lewis, Iowa, U.S.A., showed a Squash Gourd, a Musk Melon, and the flat-fruited Pumpkin.

Awards.

A dish of the Glastonbury Pear, consisting of large clear-skinned examples, was shown by C. C. TUDWAY, Esq., The Cedars, Wells, Somersetshire. The fruit has a certain similarity in shape and colour to Chaumontelle, likewise in texture of flesh, and in flavour (First-class Certificate).

Melon Royalty, a large, finely netted, white-fleshed variety, was shown by Mr. Hugh A. Pettigrew, gr. to Lord WINDSOR, St. Fagan Castle, Cardiff. The flavour was very good, and flesh about 1½ inch in thickness (Award of Merit).

The Lecture.

MISTAKES IN ORCHARD MANAGEMENT.

The lecture in the afternoon was delivered by Mr. John Ettie, upon "Mistakes in Orchard Management." Mr. Ettie is a horticultural lecturer in the county of Somerset, and having to visit the most remote districts in that county, he very frequently sees deplorable instances of mistakes in orchard management. Having taken photographs of some of the more extreme of these, Mr. Ettie was enabled, by means of a lantern, to give his audience some very startling object-lessons on "how not to treat orchards and orchard-trees." There was nothing very new in these mistakes. They are those which have been made for generations, and against which protests has always been raised, and for more than half a century at least our own columns have pointed to them with warnings, and expounded the details of a better practice. But the instances shown on Tuesday were from photographs recently taken of living trees, and it cannot be said therefore that they represent conditions of a by-gone age. It is an unpleasant fact that, notwithstanding the greater intelligence now shown in fruit cultivation in gardens, the old and bad practices are still pursued in many of the orchards in this country. This is especially the case when the orchards are under the care of farmers who, as a rule, do not cultivate their trees with a view to obtaining the greatest profit possible from them, but treat them rather as an unproductive part of the farm, that occasionally may yield a crop of fruits, and thus swell the amount of the receipts for the particular years in which the trees happen to bear.

Mr. Ettie commenced by exposing a nurseryman's mistake. He showed a photograph of a young tree, that was proved had been sent out by a nurseryman, and that carried with it to the orchard an infestation of American-blight or mealy-bug. We are glad that Mr. Ettie stated that the tree was from a small, and we suppose, a third-rate nursery, because care is taken by most of the fruit-tree nurserymen of repute to keep their stock clean. The little homily read them by the lecturer, may, however, have good effects even upon such nurserymen. The next view showed the same tree after the bug had been destroyed by a wash, such as Gishurst Compound, Abol Insecticide, or Petroleum Emulsion.

Mr. Ettie next urged that it was essential there should exist better relations between owners of orchards and their tenants than at present, and gave instances that he has observed during the past six weeks, on the one hand, of neglect and want of intelligence on the part of tenants, and on the other of lack of sympathy and encouragement on the part of landlords.

Mistakes in the selection of varieties engaged the lecturer's attention for the moment; and he gave the excellent advice that planters should first obtain a knowledge of which good varieties had previously been found to succeed in a particular district. Plant largely of these and introduce others in small numbers, increasing them or not as experience may advise. One picture illustrated the folly of planters making too small a hole for the roots of the tree, and cutting these to make them fit the hole. Following this was one showing how a young tree had been properly planted in an old orchard, which it is sometimes essential should be done; a hole had been made 6 feet each way and 2 feet deep, and when planting, the hole was refilled entirely with soil obtained from a spot where fruit-trees had not been previously cultivated. The tree was four years old, and cost 3s., and the digging of the hole, planting, staking, &c., cost another 1s. 8d. The stake was inserted 3 feet in the ground, and before the planting of the tree. In the next picture this newly-planted tree appeared with a mulching of manure over the recently made hole where the roots had been buried.

Several other methods of supporting and protecting fruit-trees were shown which were very efficient, but rather too costly for general adoption in orchards. One of these methods consisted of driving two pieces of wood, 4 inches wide, into the ground, one on either side of the tree. Then pieces of wood were nailed across on either side of these, the tree being enclosed in the space of the 4-inch thick posts. In another case, old railway-sleepers were sawn up and used for posts, and old barrel-staves nailed across them.

The folly of thorning trees, whether with or without a stake, was emphasised by some very effective photographs. Thorns may protect the trees from horned cattle, but they inflict injuries upon the bark of the trees by pricking and chafing them, and in harbouring pests, that are nearly as disastrous as the cattle would prove were no precautions taken at all.

The question of pruning was next illustrated, and Mr. Ettie gave it as his opinion, that newly planted fruit-trees, three or four years old, should be pruned back before they commence to grow again, that the "back buds" may be induced the better to break away. The last "error" that was exhibited was one in which a useless variety of Apple-tree had been headed back and grafted with a better sort, but the operator had worked the branches higher by several feet than necessary. Incidentally the audience obtained some sidelights upon orchard cultivation in the western counties, and Mr. Ettie clearly showed that he is well fitted for the work he is doing in Somerset; though he might be agreeably surprised at the more intelligent management of some orchards to be seen in Kent and other counties near the metropolis.

CROYDON HORTICULTURAL MUTUAL IMPROVEMENT.

OCTOBER 16.—One of the best attended meetings of the session was held at the Sunflower Temperance Hotel, on Tuesday. Mr. W. J. Simpson, gardener at Falkland Park, Upper Norwood, occupied the chair. More than sixty members attended, and seven new ones were elected. A fine display of fruit, plants, and cut flowers of Chrysanthemum was made.

The usual business being disposed of, Mr. M. E. Mills, the Vice-Chairman and winner of the Croydon Chrysanthemum Society's first Challenge Cup, read a paper upon "The Chrysanthemum," giving the selection and preparation of soils and manures, methods of propagation, and the most suitable times for taking cuttings of each class; potting, stopping, and summer treatment generally; hints on housing the plants, and the preparation of plants and blooms for exhibition.

A profitable discussion ensued at the close of this very excellent lecture.

W. WELLS & Co., Earlswood, exhibited about two dozen fine varieties of Chrysanthemums; from Mr. W. J. SIMPSON himself came a dozen varieties.

MESSRS. JOHN LAING & SONS showed twenty-four fine dishes of Apples and two tables filled with plants.

MESSRS. JOHN FEED & SONS showed winter-flowering Begonias.

WARGRAVE GARDENERS'.

OCTOBER 17.—At the fortnightly meeting, held on the above date, Mr. T. Haskett, gr. to J. W. Rhodes, Esq., Hennerton, read a very practical and instructive paper on "Celery Culture." Seed-sowing, pricking-out, trenching, earthing-up, watering, and other points of cultivation were carefully described; as were also the pests, and remedies for their eradication. Sutton's "White Gem," and "Major Clarke's Red," were recommended as the two best varieties for early, and main crops respectively. A discussion took place, in which many members joined. A hearty vote of thanks was accorded Mr. Haskett for his paper. There were numerous exhibits. Mr. Haskett being awarded a Cultural Certificate for some fine Marie Louise d'Uccle Pears. H. Coteby, Hon. Sec.

HARDY FRUITS AT WORCESTER.

OCTOBER 20.—Under the auspices of the Worcestershire County Council, an important exhibition was opened in the Shire Hall, Worcester, on the above date. It was intended to provide a representative display of the horticultural and agricultural produce of the county, including garden and orchard fruits, vegetables, roots, Hops, cereals, and dairy produce, and a large measure of success attended the experiment. All available space in the large hall was occupied, a smaller apartment was allotted to the dairy produce, and other rooms including the entrance, were devoted to demonstrations in fruit-drying and cider preparation. Hardy fruits were admirably shown in all the classes, and the entries were very numerous, especially with Apples, no fewer than thirty-four exhibits being staged in the class for dessert varieties, which included about 200 dishes of fruits. This was the largest class, but there were several others but little below it in numbers. Considering that no prizes were offered, it was surprising that so many exhibitors contributed to the show. It might have been expected that a few large collections would be sent by those desirous of aiding the objects of the promoters, but it is a rare occurrence to find twenty to thirty exhibitors in one class without a prize being offered. The duties of the judges consisted in classifying the exhibits according to merit as first or second, the former securing a certificate, while all that were not of sufficient merit to take rank in either of these degrees were unrecognised. Expenses of carriage were, however, paid by the Committee, an important help which many would appreciate. Cards were issued to the exhibitors, upon which were entered the names of the varieties shown, together with all available facts respecting soils, situation, stocks, and general cultivation, which were likely to be useful. Probably the information thus obtained will be tabulated and issued in the report which is promised later on.

The Agricultural Sub-Committee, with their Chairman, Mr. E. V. V. Wheeler, and the organising secretary, Mr. James Mason, deserve much credit for their efforts to inaugurate an educational exhibition that might be developed into a gathering of very great importance in the district. One part of the programme consisted of conferences on fruit, and other subjects for Monday, Tuesday, and Wednesday.

Throughout the exhibition the quality of the produce of all kinds was exceptionally good and uniform in character, the display of roots alone being creditable to any agricultural district.

NATIONAL CHRYSANTHEMUM.

OCTOBER 22.—A meeting of the Floral Committee of this Society was held at the Royal Aquarium, Westminster, on the above date, and there were numerous novelties presented by various raisers and cultivators. These were judged according to a new system described in the published *Regulations*, and similar, we believe, to that practised in America. Novelties that now fail to obtain a First-class Certificate of Merit, may now be given an Award of Merit, or a Commendation. In cases of exhibition blooms, a variety must obtain at least fifteen

points to be awarded a First-class Certificate, twelve points for an Award of Merit, and nine for a "Commendation." The system did not appear to be very popular with several members of the Committee, and its adoption has caused very much more work than formerly, the Committee sitting on this occasion from about 3 o'clock in the afternoon until nearly 4 o'clock. It may be found that under the new system, more varieties will obtain Certificates than formerly. In any event, cultivators may know that many of the novelties which will figure as "Commended," or obtain Awards of Merit, had they been exhibited last year, would have received no distinction whatever.

The varieties below obtained Awards as follows:—

Lily Mountford, from Mr. GLEESON, Warren House Gardens, Stanmore.—A magnificent Japanese flower, suggestive of Mrs. Barkley, but decidedly distinct, and much more interesting in its beautiful shading of rose colour and silvery sheen (First-class Certificate).

Master L. Somer.—A Japanese incurved flower, large, with good wide petals. Colour red, with copperish-yellow reverse. From Mr. H. PERKINS, Greenlands Gardens, Henley-on-Thames (First-class Certificate).

Miss Doris.—An early flowering, single white variety. From Messrs. H. CANNELL & SONS, Swanley (Award of Merit).

Mrs. F. Green Smith.—A broad-petalled, large-flowered Japanese variety. Colour yellow, many of the petals prettily tinted with red. From Mr. W. G. GODFREY (Award of Merit).

The Princess.—A creamy-white Japanese variety, petals slightly twisted. From Mr. W. J. GODFREY (First-class Certificate).

Rev. Douglas.—A canary-yellow coloured Japanese flower, with rather poor petal. Bloom large, and tapering to centre considerably. From Mr. H. WEEKS, Thrumpton Hall Gardens, Derby (First-class Certificate).

Flower of Leatherhead.—A large yellow coloured Japanese flower, petals slightly fluted and sparsely forked. From Mr. W. J. GODFREY (First-class Certificate).

General Butler.—A magnificent incurved Japanese bloom, of light buff colour. From Mr. C. PEMBER (Award of Merit).

The following varieties among others were Commended:—*Matthew Smith*, a big, dull red, rather uninteresting flower; and *Mr. J. L. McKellar*, a pale mauve coloured Japanese, of a very promising nature.

MARKETS.

COVENT GARDEN, OCTOBER 25.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Etc.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz. 5 0-7 0	Ferns, small, per 100 ... 4 0-6 0
Arbor-vite, var. doz. 6 0-36 0	Ficus elastica, each 1 6-7 6
Aspidistras, p. doz. 18 0-36 0	Foliage plants, var., each ... 1 0-5 0
— specimen, each 5 0-10 6	Lily of Valley, each 1 9-3 0
Cannas, per dozen 18 0—	Lycopodiums, doz. 8 0-4 0
Crotons, per doz. 18 0-30 0	Marguerites, per dozen ... 8 0-12 0
Cyclamen, per doz. 8 0-10 0	Myrtles, per dozen 6 0-9 0
Dracenas, var., per dozen ... 12 0-30 0	Palms, various, ea. 1 0-15 0
— viridis, per doz. 9 0-18 0	— specimens, each 21 0-63 0
Ericas, var., per doz. 12 0-36 0	Pelargoniums, scarlet, per dozen 8 0-12 0
Eucalyptus, various, per dozen ... 6 0-18 0	— Ivyleaf, per doz. 8 0-10 0
Evergreens, var., per dozen ... 4 0-18 0	Spiraeas, per dozen ... 6 0-12 0
Ferns, in variety, per dozen ... 4 0-18 0	

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, English, per bushel ... 2 6-4 6	Lemons, case ... 20 0-30 0
Cookers, large ... 3 0-4 0	Lychees, New, pkt. 1 0—
Warner's King ... 3 0-4 0	Medlars, case ... 8 6—
Various ... 2 0-4 0	Melons, each ... 0 6-1 6
Cox's, in sieves ... 3 6-5 0	Oranges, Jamaica, per case (200) ... 5 6-6 0
Kings, bush. ... 4 0-6 0	— Tenerife, case ... 5 0-8 0
Blenheims, bush. 4 0-5 6	Peaches, per doz. ... Class A ... 0 0-15 0
Ribston's, bush. 4 6-7 6	Class B ... 4 0-6 0
Bananas, bunch ... 5 0-9 0	— Outdoor, dozen 2 0-8 0
— Loose, per doz. 1 0-1 6	Pears, Beurre Claire-gau, late Wind-sors, &c., per sieve ... 2 0-4 0
Blackberries, peck ... 1 9-2 0	— Californian, in cases ... 4 0-5 0
Cobnuts, lb. ... 0 4-0 4	— Stewing, case ... 6 8-8 6
Cranberries, case ... 11 0—	— in bask. 2 0-2 6
— quart ... 0 5—	— French, Duchesse, in crates ... 5 0-10 6
Damsons, sieve ... 1 0-1 6	Persimmons or Kaki, per doz. ... 1 6-3 0
Figs, per doz. ... 0 9-1 0	Pines, each ... 1 6-3 0
— Italian, basket 1 6-1 9	Prunes in sieve ... 2 0-2 3
Grapes, Hamburgh, per lb. ... 0 8-1 0	Quinces, per sieve 3 0—
— Alicante ... 0 6-1 0	Walnuts, Grenoble, per bag ... 7 0-7 6
— Colmar ... 0 9-1 6	— in bags ... 8 0-12 0
— Gros Maroc ... 0 9-1 3	
— Muscats, A, lb. 1 6-2 6	
— Muscats, B, per lb. ... 0 8-1 3	
— Belgian, per lb. 0 6-1 0	
— Almeida, in barrels ... 10 0-15 0	

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus "Fern," bunch ... 1 0-2 0	Lily of Valley, per doz. bunches ... 9 0-15 0
Carnations, per doz. blooms ... 1 0-2 0	Maidenhair Fern, per doz. bunches 4 0-8 0
Cattleyas, per dozen 9 0-12 0	Marguerites, p. doz. bunches ... 2 0-4 0
Eucharis, per dozen 2 0-4 0	Mignonette, doz. bnn. 4 0-6 0
Gardenias, per doz. spikes ... 1 6-2 6	Odontoglossums, per dozen ... 4 0-8 0
Gladioli, scarlet, per dozen ... 2 6-5 0	Roses, Red, per doz. — Tea, white, per dozen ... 1 0-3 0
Lilium Harrisii, per dozen blooms ... 4 0-6 0	— Safrano, per dozen ... 1 0-3 0
Lilium lancifolium album, doz. blus. 1 6-3 0	— Catherine Mermet, per dozen 2 0-4 0
Lilium rubrum, per dozen ... 3 0-5 0	Smilax, per bunch 3 0-5 0
Lilium longiflorum, per dozen ... 4 0-6 0	Tuberose, per doz. blooms ... 0 4-0 6

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Aubergines, per doz. 1 6—	Lettuce, English Cos, per score 1 0-2 0
Artichokes, Globe, per doz. ... 2 0—	Mint, per doz. bunches ... 1 6—
— Jerusalem, sieve 1 3-1 6	Mushrooms, house, per lb. ... 1 0—
Beans, Scarlet Runners, bush. 0 6-1 0	— outdoor, per lb. 0 6—
— Ch. Islds., dwf, new, per lb. ... 0 6—	Onions, picklers, per sieve ... 3 0—
Beetroots, bushel ... 1 0-1 3	— per bag ... 3 0-3 6
Beet, per dozen ... 0 6—	— cases ... 6 0-6 6
Brussel Sprouts, per sieve ... 1 3-1 6	— Engl., cwt. bag 4 0-5 0
Cabbage, taily ... 1 0-2 0	Parsley, 12 bunches per sieve ... 0 0-1 0
— dozen ... 0 6—	Parsnips, in cwt. bags 2 6—
Carrots, new, dozen 1 6-2 0	Potatoes, per ton 80 0-100 0
— washed, in cwt. bags ... 2 0-2 6	Radishes, 12 bches. 0 0-1 0
Cauliflowers, per dz. taily ... 4 0-8 0	Salad, small, punnets, per dozen 1 3—
Celeriac, per dozen 1 6—	Shallots, new, p. lb. 0 3—
Celery, doz. bunches 10 0-12 0	Spinach, per sieve ... 0 0-1 0
Chicory, per lb. ... 0 3—	— bushel ... 1 0-1 6
Cress, doz. punnets 1 6—	Tomatoes, English, new, per 12 lb. 4 6-5 0
Cucumbers, doz. ... 2 0-2 8	— Channel Islands, per lb. ... 0 2 0 3
Endive, new French, per dozen ... 1 0—	— French, crates 3 0—
— English, score 1 0—	— Canary deeps ... 2 6—
Garlic, new, lb. ... 0 2—	Turnips, per dozen in bags ... 2 0-2 6
— French, cwt. ... 13 0—	Vegetable-Marrows, per dozen ... 1 0—
Horseradish, English, bundle ... 1 6-2 0	— taily ... 5 0—
— foreign, p. bdle. 1 0-1 3	Watercress, p. doz. bunches ... 0 4-0 6
Leeks, p. doz. bches. 1 6—	
Lettuce, French Cabbage, doz. ... 1 0—	

REMARKS.—Spinach is now easier in price. Damsons are nearly over. Murcia Grapes, in boxes of 15 lb. net, sell at 4s. Supplies all round are plentiful, and but little alteration in prices is noted. Canary Island Tomatoes are now coming in.

POTATOS.

Potatos: Various sorts, 80s. to 100s. per ton. John Bath, 32 & 34, Wellington Street, Covent Garden.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending October 20, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.	1900.	Difference.
Wheat	s. d. 28 2	s. d. 28 4	+ 0 2
Barley	27 6	26 5	- 1 1
Oats	16 10	16 11	+ 0 1

FRUIT AND VEGETABLES.

GLASGOW: October 24.—The following are the averages of the prices recorded since our last report:—Apples, Canadian, 15s. to 26s. per barrel; United States, various sorts, 14s. to 20s. do.; Pears, Paris Duchesse, per large crates, 7s. to 9s.; Havre Duchesse, 2s. 6d. to 3s. 6d. per case; Grapes, new, English, 1s. to 2s. per lb.; do., Almeida, 10s. to 25s. per barrel; Lemons, Palermo, various counts, 5s. to 8s. per box; do., Naples, 25s. to 35s. per case; do., Malaga, 21s. to 24s. per half chest; do., cases, 18s. to 21s.; Pomegranates, Malaga, 7s. to 8s. per case; Bananas, extras, 9s. to 11s. per bunch; No. 1, 7s. to 8s. 6d. do.; No. 2, 6s. to 7s. do.; Onions, Valencia, 4 in a row, 5s. 6d. to 6s. 3d. per case; 5 and 6 in a row, 6s. 6d. to 7s. 8d. do.; Mushrooms, 1s. per lb.

LIVERPOOL: October 24.—Wholesale Vegetable Market.—Potatos, per cwt.: Lynn Greys, 3s. 4d. to 3s. 8d.; Bruces, 3s. 6d. to 4s.; Main Crops, 3s. 8d. to 4s. 8d.; Giants, 3s. 3d. to 3s. 7d.; Turnips, 6d. to 8d. per 12 bunches; Swedes, 1s. 2d. to 1s. 4d. per cwt.; Carrots, 2s. 6d. to 3s. do.; Onions, English, 4s. 6d. to 5s. 6d. per cwt.; foreign, 3s. to 3s. 6d. do.; Parsley, 6d. to 8d. per 12 bunches; Cucumbers, 1s. to 2s. per dozen; Cauliflowers, 6d. to 1s. 6d. do.; Cabbages, 6d. to 1s. do.; Celery, 6d. to 1s. 6d. do. St. John's: Potatos, 1s. to 1s. 2d. per peck; Grapes, English, 2s. 6d. to 3s. 6d. per lb.; do., foreign, 4d. to 8d. do.; Pine-apples, English, 7s. 6d.

each; Apples, 2d. to 3d. per pound; Pears, 2d. to 4d. do.; Tomatos, 6d. do.; Damsons, 2d. do. Birkenhead: Potatos, 1s. to 1s. 2d. per peck; Cucumbers, 3d. to 4d. each; Damsons, 1 1/2d. per lb.; Grapes, English, 1s. to 2s. 6d. do.; do., foreign, 4d. to 8d. do.; Mushrooms, 4d. to 5d. do.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period October 14 to October 20, 1900. Height above sea-level 24 feet.

1900.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			
		At 9 A.M.		DAY.	NIGHT.	RAINFALL.	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.
		Dry Bulb.	Wet Bulb.						
OCTOBER 14 TO OCTOBER 20.		Highest.	Lowest.						LOWEST TEMPERATURE ON GRASS.
		deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.
SUN. 14	W.N.W.	47.1	42.6	19.7	42.8	0.01	51.8	55.0	56.1
MON. 15	W.N.W.	45.9	41.1	52.2	37.2	...	49.0	54.4	56.0
TUES. 16	S.E.	43.8	40.4	55.3	31.0	...	48.2	53.3	55.5
WED. 17	S.S.W.	54.9	52.8	63.4	43.8	0.03	50.1	53.0	55.5
THU. 18	W.N.W.	51.9	49.1	55.2	47.7	0.02	50.9	53.3	55.0
FRI. 19	N.N.E.	48.9	46.3	55.3	45.3	...	51.5	53.3	55.1
SAT. 20	N.N.E.	46.4	43.8	50.1	43.5	...	51.1	53.3	54.1
MEANS...	...	48.4	45.2	54.5	41.6	0.09	50.4	53.7	55.5

Remarks.—A week of dull, almost sunless weather, with cold winds and slight showers on three days.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending October 20, is furnished from the Meteorological Office:—

"The weather during this period was rather rainy and unsettled over the greater part of the kingdom, but over the southern and central counties of England and in the south of Ireland the conditions were mainly fair.

"The temperature was rather below the mean generally, but just equal to the normal in England, S.W., and a little above it in the Channel Islands. The highest of the maxima were recorded on the 17th in England, but on irregular dates over Ireland and Scotland; they ranged from 60° in Scotland, N., and 65° in England, S., to 55° in Scotland, W., England, N.W., and Ireland, N. The lowest of the minima occurred, as a rule, during the earlier days of the period, and ranged from 24° in Scotland, E., and 25° in Scotland, W., to 32° in England, E. and S.W., 35° in England, S., and to 47° in the Channel Islands.

"The rainfall was a little more than the mean in Scotland, E., but less in all other districts. In England, S., and the Channel Islands the fall was very slight.

"The bright sunshine exceeded the mean in nearly all districts. The percentage of the possible duration ranged from 52 in England, S.W., 45 in Ireland, S., and 44 in the Channel Islands, to 29 in Scotland, E., and 27 in Scotland, W."

GARDENING APPOINTMENTS.

MR. G. W. TURNER, late Foreman at Farnham Chase Gardens, Slough, Bucks, as Gardener to Miss S. HAMOND, Fakenham, Norfolk.

MR. ALFRED BAYFORD, who is leaving Brandries Gardens, Biddington, Surrey, through death of employer, as Gardener to F. FLETCHER, Esq., Oak Lawn, Edenbridge, Kent.

MR. JOHN MACKINLAY, for the past seven years Gardener to the late Admiral of the Fleet, Sir ALEXANDER MILNE, Bart., and latterly to Sir BERNARD MILNE, Bart., at Inveresk, Musselburgh, as Gardener to Earl COWICE, K.G., Farnham, Hertford, and will enter upon his duties early in November. Mr. MACKINLAY was for some years under the late Mr. DUNN, at Dalkeith Palace.

MR. HENRY GRANTHEM, who for four and half years acted as Foreman in the gardens at Sunningdale Park, as Head Gardener to VERE L. OLIVER, Esq., Whitmore Lodge, Sunninghill, Ascot.

MR. DAVID CROMBIE, for the past fourteen years Head Gardener to the Right Hon. Viscount POWERSCOTT, K.P., Powerscourt, Enniskilly, Co. Wicklow, as Head Gardener to the Most Noble The Marquis of WATERFORD, Curraghmore, Portlaw, Co. Waterford.

MR. RICHARD WILSON, for the past five years Head Gardener to the Right Hon. Lady HOLMPEATRICK, Abbotstown, Castleknock, Co. Dublin, as Head Gardener to Sir ARTHUR EDMONSTONE, Bart., Duntreath Castle, Blane-feld, Stirlingshire.

Mr. J. RYDER, until lately Head Gardener at Hawkswick Hall, St. Albans, as Head Gardener to the Right Hon. Earl of AYLENFORD, Packington Hall, Coventry.
Mr. WILLIAM OWEN, lately Gardener to the Right Hon. G. H. ALSTON, M.P., Foston Hall, Derby, has been appointed to succeed Mr. CROMBIE in the charge of the Gardens at Powerscourt, Wicklow.
Mr. G. PUDDIPHATT, for nearly five years Head Gardener to G. LAKE, Esq., at Bushey House, Bushey, Herts, as Head Gardener to E. H. CUTHBERTSON, Esq., at the same place.

CATALOGUES RECEIVED.

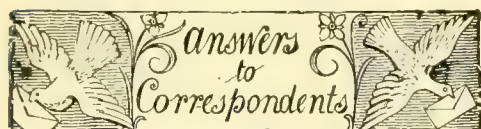
A. CANNELL & SONS, Swanley, Kent.—Fruit Trees, Roses, Carnations, Primulas, Dahlias, Chrysanthemums, &c.
W. RUMSEY, Joyning's Nurseries, Waltham Cross.—Roses, Fruit Trees, Ornamental Trees and Shrubs, &c.
BEAL & BIEBERSTEDT, Coburg Street, Leith.—Sweet Pea Seeds.
CHIVAL & SONS, Lowfield Nurseries, Crawley, Fruit Trees, Forest and Ornamental Trees and Shrubs, Roses, Rhododendrons, &c.
SOTTEBT & NOTTING, Luxembourg—Roses.
Geo. COOLING & SONS, Bath—Roses, Fruit Trees, Ornamental Trees and Shrubs.
Wm. CLIBBAN & SON, Oldfield Nurseries, Altrincham, and 10 & 12, Market Street, Manchester—Trees and Shrubs, Roses, Fruit Trees, &c.

A HORTICULTURAL EXHIBITION is to be held in the Y.M.C.A. Buildings at Bedford, on November 15, and the proceeds, after payment of expenses, will be equally divided between the Bedfordshire County Hospital and the Y.M.C.A. Mr. GEO. MACKINLAY, of West Park Gardens, who sends us a circular upon the subject, pleads for support from gentlemen and gardeners residing in or near the county. The Hon. Secretaries are Messrs. EZRA BRAGGINS and FRANK SPOONER, Y.M.C.A. Buildings, Bedford, from whom information upon matters of details should be enquired.

FRUIT IN TASMANIA.—At the instance of the Rt. Hon. Sir E. BRADDON, the Tasmanian Minister of Agriculture has furnished us with a mass of figures, statistics relating to the agriculture of Tasmania, which are of interest to us in that these figures contain particulars relating to the acreage devoted to the growth of fruit in the colony, and the actual produce. It appears that the yield of Apples in 1860 was 118,810 bushels, in 1899 the yield was just 363,915 bushels. Of Pears the produce in 1860 was 22,029 bushels, the total for last year was 33,738 bushels. It is noted that the produce of "other fruits" last year amounted to 40,481 bushels. The acreage now devoted to fruit growing is as follows:—

	Acres.		Acres.
Apples	8373	Peaches	468
Pears	1255	Raspberries	722
Apricots	835	Gooseberries	629
Plums	1145	Strawberries	325
Cherries	783	Currants	919

or a grand total of 15,454 acres, out of a total of land in crop represented by the figures 258,542 acres.



BOOKS: C. E. F. You may meet with Miss Annie Hassard's *Manual on Table Decorations* at the second-hand bookshops. No new work on the subject exists in the English language.

CERIFICATE OF MERIT: W. R. Any jobbing printer would furnish cards measuring about 2 by 4 inches, with the words required printed on them.

CHRYSANTHEMUMS: *Chrysanth.* Once the plants are badly infested with the rust it may be advisable to discontinue the cultivation of the plants for a few years. The progress of the fungus is very erratic, and if many persons around you are growing them, the rust is sure to spread to some of them.

CHRYSALEIS: C. S. Probably the pupa of the Death's-head Moth, or of the Goat Moth, if from decayed wood.

CRAB: J. C. Small one, Red Siberian; other, Paul's Imperial.

EUCHARIS GRANDIFLORA (AMAZONICA): *Eucharis*. The plant should not be rested by entirely withholding water, but the quantity afforded should be reduced after flowering. This period may last two months, and it may or may not be taken in a cooler house than that in which the plant made growth and flowered. Leaves and flowers are produced almost simultaneously. Potting

and repotting may take place just before starting to force the plant into renewed growth. The plant does not like root-disturbance, and you should not endeavour to detach the smaller bulbs too often; once in five or six years is often enough if you are looking for flowers. No cure for the bulb mite. The plant is found on riverbanks in Brazil. See answer in our last issue, p. 299.

FUNGUS: H. D. W. *Agaricus* (*Naucoria*) *sideroides*, *Dacrymyces deliquescens*, white mycelium.

GARDENER: We thank you for sending the two-flowered spike of *Cypripedium insigne*. We frequently see similar instances of good culture.

GROUP OF PLANTS: A. B. Ferns would certainly be allowed to be shown as ground-work, edgings, or specimens.

INSECTS: S. E. A., *Yorks*. The beetles found in the boxes are a species of *Anobium*, popularly known as the Death-watch, because they make a curious ticking noise in the stillness of the night. This is supposed to be the call of the *Anobium* to its mate.

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can consistently with our editorial work, but as the naming entails much labour and considerable cost we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is often unavoidable.—G. H. 1. Rambour Franc; 2. Brownlee's Russet; 3. Yellow Ingestre; the Pear is Catillac.—W. W. 1. Cox's Pomona; 2. Queen Caroline; 3. Striped Beeling; 4. Nonpareil; 5. not known; 6. Shobden Court.—J. H. A. The two Pears were over-ripe, and being packed loosely were both smashed. Try again, and we shall be glad to help you.—Monmouth. 1. Winter Greening; 2. Waltham Abbey Seedling; 3. Radford Beauty.—W. H. S. Ecklinville.—L. S. 1. Dutch Mignonne; 2. Barton's Incomparable; 3. St. André.—T. N. Boston Russet.—G. C. The Apple is Winter Hawthornden; the Pear is Forme de Délices.—W. V. Your enquiry was answered last week, see p. 300.—W. H. Many thanks for your interesting letter. Unfortunately you are incorrect on all points. The Apple is Keswick Codlin (not Codling). Potts' Seedling has been known for half-a-century, and Loddington has been grown for over thirty years, but has been better known perhaps as Stone's Apple. The former name indicates the place where it originated, the latter the name of the owner. If the trees are healthy and fertile, by all means preserve them, and prevent other trees overshadowing them.—R. Your Pear is much over-ripe.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—T. W. R., *Weston-birt*. 1, 2, and 4, *Crataegus mollis*; 3, *C. coccinea*.—C. M., 1, *Cornus* sp. (no fruit); 2, *Pyrus Toringo*; 3, *Cornus* sp. (no fruit); 4, *C. alternifolia*; 5, *C. Mas*; 6, *C. Mas variegata* (nos. 1 and 3 are probably American, but fruit is required to determine them correctly).—P. W., *Magdeburg*. A fine form of *Cattleya intermedia* known as *Cattleya intermedia punctatissima*. The flowers are larger than those of most other forms of *C. intermedia*, and the labellum seems to indicate that it may be a secondary cross of *C. intermedia* with *Laelio-Cattleya* × *Schilleriana* (*C. intermedia* × *L. purpurata*).—A. C. 1, 2, 3, 4, 5, 6, Not found; 7, *Cupressus* (*Retinospora*) *pisifera* var. *plumosa*; 8, *Cupressus Lawsoniana* var.; 9, *Cephalotaxus Fortunei*; 10, *Cupressus* (*Retinospora*) *filifera*; 11, *Cupressus Lawsoniana variegata*; 12, *Cupressus torulosa*. The two growths represent one, the juvenile or larval, the other the adult stage.—W. D. *Lycaste tetragona*.—J. F. 1, *Davallia canariensis*; 2, *Davallia Mariesii*; 3, *Pteris umbrosa*; 4, *Nephrodium molle*; 5, *Blechnum polypodioides*; 6, *Adiantum capillus-veneris*, but not the British form; 7, *Adiantum formosum*. *Subscriber*. 1, *Oncidium divaricatum*; 2, *Laelia Perrini*; 3, *Adiantum formosum*; 4, *Oncidium flexuosum*; 5, next week.—F. G. *Cowdray*. 1, *Schinus Molle*; 2, *Mirabilis Jalapa*; 3, *Passiflora*,

apparently one of the Australian species.—W. B. *Abies cephalonica*.—J. S. & Co. *Magnolia acuminata*.—Bicknell. *Alyssum calycinum*.

NOTICE TO QUIT EMPLOYMENT: A. B. C. A head gardener engaged at an annual salary is a yearly servant (a domestic at law), and as such entitled to a quarter's notice, or money in lieu thereof, as well as compensation for cottage (if he have one), coals, and other perquisites, should his employer wish to get rid of him sooner. It is now usual to give and accept one month's notice.

POTTING OF PAPER-WHITE NARCISSUS BULBS, so AS TO FLOWER THEM AT EASTER: A Reader. It is an early flowerer, and may therefore be potted about the end of November, when, with but little forcing after being well rooted in the plunging-bed in darkness, and then brought on in the greenhouse for a fortnight, they should come into flower at the required time.

RHIZOMES OF PHRYNIUM VARIEGATUM: C. H. W. Lay them horizontally on the soil, and cover about 1 inch. The growing end will push through the soil. In fact, treat them as you would the tubers of *Dracenas* and *Achimenes*.

TOMATOS DISEASED: A. D. and Love Apple. The hard patches present on otherwise ripe Tomatos are due to excess and consequent granulation of one of the constituents. This result is caused by a lack of potash in the soil. Sulphate of potash removes the complaint. Kainit should not be used. Both cases sent are identical. There is no fungus concerned.

UNFLOWERED CATTLEYA: X. Y. Z. The plant known in gardens as *Cattleya crispa* in *Lelia crispa*. The point you err in, and whereby you fail to flower it, is probably that you do not give it sunlight enough after the growths are completed. When the bulbs are fully made up, place the plant on a shelf near the glass of the roof and where a fair amount of sunlight falls. Restrict the water supply until the flower-spikes appear, or until the plant commences to grow again.

VARIOUS DRESSINGS FOR A LAWN: Pen. The soil which you intend to use, should preferably consist of sifted top spit of meadow land, but almost any kind of soil will improve poor turf. Sand would be admissible if the soil is heavy, or water lies on the surface, although draining with rubble-drains would be a better means of rendering the land drier. Bone-meal is slow in action, and should be put on the land at this season. Soot provides ammonia, and may be applied when the grass has begun to grow. Lime may be applied in the winter, as slaked by aerial moisture. Cow-manure may be put on the lawn in the winter, and when dry, it may be bush-harrowed so as to break up the lumps, and then be raked off with the other rubbish before the grass has begun to grow much. A good late winter and spring dressing, and one that is usually found sufficient for lawns that merely require to be freshened up, consists of sifted loam three-quarters, wood-ashes or charred garden-refuse, also sifted finely, one quarter. The ashes from peat are likewise good and as efficient in ridding turf of moss as wood-ashes. A little lime, if not any was used in the early winter, may be mixed with the loam and ashes; indeed, on peaty soils, lime may be strewn on the turf twice or thrice in the season of growth with good effect.

COMMUNICATIONS RECEIVED.—Dickson & Robinson.—Hogg & Robertson.—F. W. Stone.—H. Corder, packet forwarded as desired.—Caledonia.—W. Camm.—H. B.—D. G.—E. T.—H. F. M.—Winton.—O. L.—Old subscriber.—L. L. Marzeille.—T. N.—W. S. W.—H. R. W.—W. W.—Prof. Schinz Zurich.—B. D. J.—W. S. G., shortly.—Dr. Baroni.—W. B.—E. C. L., next week.—S. A.—W. C.—Fruit.—J. M.—D. B.—W. S.—C. H. P.—J. F.—J. Mayne.—F. C. S.—G. A. B.—A. D. Lee.—R. L.—W. B. H.—A. D.—W. H. D.—H. T. M.—H. W. W.—Alger Potts.—E. H. J.—T. B.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

☛ TREBLED. ☛

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

THE

Gardeners' Chronicle

No. 723—SATURDAY, NOV. 3, 1900.

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THE DAUGHTERS OF THE YEAR.
OCTOBER.

OCTOBER wears a Janus-face; looks back, fond and smiling, to the departed summer months; looks on constrainedly to its younger, feebler sisters, rising pale and hooded out of the cold, lifeless north. Let us too look back through its eyes upon the changing pageants in the past, which its averted face concludes.

A good garden is a series of dissolving views; gradual the array of March and April; gradual the fading of October—gradual, not abrupt; and between this Alpha and Omega need be no solution of continuity. Form and colour in the borders shift their places, but are ever present. The achievement is not an easy nor an immediate one; it means faithful study of Nature, of soil and climate, of plant habit, preference, idiosyncrasy; it means wise selection, artistic grouping, accurate anticipation, hiving of annual experience, observance watchful and incessant, with note-book ever in hand—laborious, if you like, yet not more laborious, and many times more compensative, than the unintelligent mechanism of mosaicultural carpet-bedding.

Hardly till the third decade of the month was the brightness of our borders dimmed. September flowers lingered: Enothera, Orpine, Tritoma, pretty pink Digitalis Thapsi. Summer annuals, Coreopsis and Marigold, Tropæolum and Mignonette, knew no abatement; Michaelmas Daisies reached perfection; late Chrys-

anthemums shone out upon the sunny, frostless days as profuse and vigorous as under glass; while seedlings of this year's Delphinium, Dahlia, and Snapdragon, bloomed with presumptuous fullness. October, too, has beauties of its own; the trees of a St. Luke's summer are hung with jewels, not with leaves. The red or yellow foliage of Rowan, Colutea, Spindle-tree, Crategus coccinea, Gueldres Rose, Ampelopsis, was a sunshine of their own on sunless days. Colchicum—Naked Boys our "liberal shepherds" call it—peeped out in unexpected corners; pretty Goldilocks, Chrysocoma lino-syris, spread into a brilliant bush of tufted yellow. The great hips of Rosa rugosa gleamed amid their bright green foliage; a sheltered Aralia pushed up its ivy-like bloom; crimson berries festooned the gadding branches of Bryonia, and the poisonous Arum-fruits stood stiff amid the Ferns and Periwinkles. Pampas-grass erected finally its tall silvery plumes, a sight to see by moonlight in the early evenings of the month. Nor must I forget to note a novel contribution to late autumnal beauty offered by the insect world. In all my entomological experience, I have never known so manifold an incursion of "Red Admirals." In ordinary years we see a few on Sedum, or on Harpalium; this year we could not count them—they literally filled the garden, perching impartially upon every open flower, feeding even on the half-eaten Pears which the blackbirds had mangled in the walks, adding a last touch of bizarre radiance to this strangely exceptional season.

The swallows left us on the 9th. Hundreds gathered in the early morning overhead, not one to be seen on any later day. Their place was taken by the gulls, which in this month come inland from the not distant sea. I know no birds so joyous in their aerial gambols on a sunny day; not circling solemnly like the clumsy and prosaic rooks, but poising, sweeping, dancing, in the blue; now soaring slowly upward, falling anon in slant descent with outspread wings, then resting motionless in pure grace of clean-cut outline. Another curious visitant we welcome in each October, a solitary, mateless, yellow wagtail; curious, because the wagtail is amongst the most conjugal of birds, as everyone knows who has watched at pairing time the antic dances of the male in front of and around his complacently attentive hen. The Japanese have a tradition that these birds first taught the art of love-making to the gods, who watched them, sitting on a rainbow, till they learned to experience the sportive passion, and to imitate its graceful manifestations. We never see our wagtail in the summer, but so soon as the autumnal sun begins to fall upon the balconied window of a certain unused upper room, this charming Motacilla comes to perch upon the stonework, catch flies and gnats from off the glass, ignoring with gentle dignity the approaches of a plebeian sparrow which nests hard by; regardless equally of spectators within the room, who have crept upstairs to enjoy its elegance of form and movement. Going back as I do to days when Southey was a read and cherished poet in all cultured English homes, I think of the green bird in which the spirit of slain Laila accompanied, guided, cheered, Thalaba's last perilous descent to the Domdaniel Caverns; and can almost fancy this to be an eidolon of some girlish inmate of the old house in long-past years, who, dying young like Laila, revisits annually the room in which she slept, and prayed, and grew to early-blighted womanhood.

It was my good fortune about the middle of

the month to visit the Oxford Physic Garden. It has always been to me the loveliest spot in Oxford, with its unsurpassed near view of Magdalen Bridge and Tower, its Inigo Jones gateway, its river boundary (cleansed now from sewage), its shifting views of the sweet city's dreaming spires through the rare and well-grown trees. Not less arresting was its botanical charm in days of yore, the old Linnean beds, lingering side by side with modern classification, the unwanted size and health of every plant, nursed through near a hundred years by the experimental deference and tenderness of the Baxters, father and son, backed by Dr. Daubeny's scientific erudition and ever-open purse. They laboured for a posterity which hastened to undo their work; young men succeeded Daubeny who knew not Joseph. The time-honoured array was broken up, the surviving Baxter cashiered, the Linnean garden razed, the monumental plants up-rooted, that a little Kew might be produced upon the incongruous Cherwell banks. Injecting on their heads a malison in a book I wrote ten years ago, I was soothed to see the other day how the disaster has been as far as possible repaired by the assiduity, zeal, and knowledge, of the present accomplished curator, Mr. Baker. I shall not readily forget my long and leisurely inspection in his company of every bed, and almost every plant; his kind labour alleviated as he assured me by the welcome rarity of a visitor, who, like himself, had learned to understand and care for hardy plants.

The frost has come to us with late October days. The leaves fall heavily and all together, baring the trees in a night. Asters hang brown and ragged, Geranium and Lobelia-blossoms curl up white-edged, Dahlias drop down blackened, Sweet Peas cling flowerless, annuals are matted and mildewed, "heavily hangs the broad Sunflower over its grave in the earth so chilly," the glory of 1900 has departed. A fortnight more, and all will be swept into the oven; but resurrection is as near as it is certain. I look back gratefully over such a garden year as I have never known, onward beyond the two or three months of floral patience, rest, recovery, to the coming of the milder day which shall once more burst the floral cerements—

Soon o'er their heads blithe April airs shall sing.

A thousand wild flowers round them shall unfold,
The green buds glisten in the dews of spring,
And all be vernal rapture as of old.

Corycicus senex.

NEW OR NOTEWORTHY PLANTS.

MORMODES OBERLANDERIANUM.*

THIS interesting Mormodes (fig. 96, p. 318) was discovered by F. C. Lehmann, in 1897, growing associated with Catasetum Bungei, &c., while travelling across the northern part of the South American Continent, on the banks of the Rio Meta, in the vicinity of Cabuyare, Orocué, and the once famous town of Macuco, now a mere ruin. Only a few plants were found and brought to Europe,

* *Mormodes Oberlanderianum*, Lehm. & Krzl.—Bulbis ovato-oblongis acutiusculis, 6–15 cm. longis, basi 3–4 cm. diam., sub anthesi aphyllis; foliis 3–4 oblongo-lanceolatis acutis nervosis satis teneris, ad 25 cm. longis, 3–4 cm. latis; racemo ad 25 cm. alto satis denso plurifloro; bracteis minutis; pedicellis cum ovario, 2–2.5 cm. longis; sepalis lateralibus lineari lanceolatis, dorsali lanceolato, petalis duplo latioribus oblongo-lanceolatis omnibus acutis, labello simplici sub-breviore ex ungue anguste cuneatim dilatato vel expanso sub-rhombeo complicato medio antice in dentem curvulum protracto, lineis per discum compluribus crasse acutis inter se plus minus confluentibus; gynostemio perbrevis, androclino in processum duplo longiorem acutum aucto.—Flores 4.5–5 cm. diam. Sepala petalaeque viridi-lutea roseo-adsperosa, label-lum armeniacum v. carneum ubique et præsertim infra roseo punctatum v. maculatum. F. Kränzlin.

and they were given to the zealous orchidist, Dr. Med. Oberländer of Dresden, in whose collection it flowered for the first time in the early spring of 1899, and again in January of the present year. Its vegetative organs are very compact, the conical pseudo-bulbs measuring from 6 to 14 cm. in height, by 3 to 5 cm. in diameter. The leaves are of thin texture, from 20 to 25 cm. in length, by 3 to 4 cm. wide, oblong, cuneate, acuminate, and conspicuously veined. The flower-spikes seem to be of variable size. In the cultivated plant they scarcely attain the length of 12 cm.; but in the wild plants the dry ones often measured as much as 25 cm. They are, as a rule, closely set with rather graceful, beautifully-coloured flowers, of from 4.5 to 5 cm. across, &c. The sepals and petals

is a native of Greece. Our description is taken from specimens obligingly furnished by Mr. H. Henkel of Darmstadt:—

Stem 12 to 18 inches high, branching, branches ascending; the herbaceous portions (foliage, &c.) covered with straggling white hairs. The stalk of the lower leaves is about 2 inches long, the blade 7 by $1\frac{1}{2}$ inches, lanceolate, tapering to both ends, pinnatisect, the lowest segments very short, gradually increasing in size to the centre, and then gradually decreasing to the apex, all more or less pinnatifid, ultimate segments on the distal side only, oblong-acute; upper leaves 2 inches long, sessile, linear, pinnatisect; peduncles erect, terminal, naked, or with a few minute linear bracts; flower-heads compact, corymbose, corymbs about

herbaceous portions are thickly covered with white felted down. The oblong lanceolate leaves are 8 or 9 inches long, irregularly pinnately divided, divisions 2 by $\frac{1}{2}$ in., some oblong lanceolate, entire or nearly so, others more or less pinnatifid. It is noteworthy that the ultimate divisions of the leaf are in this case on the side nearest to the centre, i.e., proximal, whilst in most other plants in which the leaf is similarly divided, the division is on the side of the leaf furthest from the axis, i.e., distal. The uppermost cauline leaves are sessile oblong, entire. The small globose flower-heads are solitary on the ends of the corymbose branches. There are no flowers on our specimens, but Mr. Henkel describes the plants as bearing small rosy flowers, "quite a sight at the present season." *M. T. M.*



FIG. 96.—MORMODES OBERLANDERIANUM. (SEE P. 317.)

are of a tender lemon-colour, spotted with rose; the lip apricot-coloured, paler above, darker below, with larger and more saturated spots. The plant belongs to the little group of comparatively small-flowering *Mormodes*, and shows some affinities with *M. atropurpureum*, Lindl., at the one hand, and with *M. convolutum*, Lindl., at the other. With the former it has, except the resemblance in the whole, some affinity (but by no means identity) in the form of the lip, which is obscurely trilobed in *M. atropurpureum*, and quite entire in our species. With *M. convolutum*, Lindl., it agrees somewhat in the colour of the flowers, which are said to be yellow, but it differs in the form of the lip and other characters. *F. C. Lehmann, October 2, 1900.*

ACHILLEA CLYPEOLATA.*

This is a low-growing perennial, with finely-cut villous leaves, and compact yellow flower-heads. It

* *Achillea clypeolata*, Smith, *Prod. Flora Græca*, ii., p. 193; *Flora Græca*, ix., p. 71, t. 893; Boissier, *Flora Orientalis*, i. (1875), p. 260.

$1\frac{1}{2}$ inch across, each flower-head about $\frac{1}{2}$ -inch, oblong, cylindric, with numerous appressed, oblong, brown-tipped bracts; corollas all tubular, yellow, limb of five ovate-acute spreading lobes. *M. T. M.*

CENTAUREA RUTIFOLIA, Sibth. & Sm.,* VAR.

LAVRANA, Hort. Henkel.

Under this name Mr. Henkel sends us cut specimens of a *Centaurea* remarkable for its much-branched angular stems and dense cano-tomentose foliage. The stems are angular, branching in the upper part into loose spreading corymbs. The

* *Centaurea rutifolia* (Sibthorp & Smith, *Flora Græca*, x., p. 11, t. 916).—Adpresse plus minuscule cana, caulibus elatis angulatis corymbose ramosis, ramis foliatis elongatis 5-7-cephalis, foliis pinnatisectis infimis interdum lyratis segmentis sessilibus inequalibus obtusis oblongis basi attenuatis, integris vel basi 1-2 lobis acutis, foliis ramis integris summis capitula, oblonga mediocria bracteantibus, involucri apice constricti glabrati, phyllis adpressis triangulari-oblongis striatis acutis apice utrinque 3-5 brevissime pectinato-ciliatis in mucronem ciliis vix longiorem abeuntibus, flosculis roseis marginalibus radiantibus pappo achenio 4-5 plo brevior. Hab. circa Byzantium. Boissier, *Flora Orientalis*, iii. (1875), p. 642.

APLOPAPPUS CROCEUS.*

This is a charming little yellow-flowered Composite for the rockwork or for pot-culture. The specimens sent us by Mr. Henkel of Darmstadt, measure about 5 inches, with ascending branches; the herbaceous portions glabrescent or slightly hirtellous; lower leaves crowded, each about $1\frac{1}{2}$ in. by $\frac{3}{4}$ in.; spatulate, minutely toothed, tapering into a narrow stalk; glabrescent above, slightly hairy beneath; midrib prominent on both surfaces; upper leaves sessile, flower-head solitary,

* *Aplopappus croceus*, Gray.—Stem stout and erect, commonly a foot or two high, and with radical leaves a foot or less long (including the petiole); cauline leaves ovate, oblong to lanceolate, partly clasping (upper an inch or two long); head mostly solitary, involucre a full inch in diameter, its bracts ovate to spatulate, oblong, very obtuse; lax inner, with scarious, erose, denticulate margins; rays saffron-yellow, sometimes an inch long; akenes narrowly oblong, nearly the length of the pappus. *Proc. Acad. Philadelphia*, (1863), 65. Rocky Mounts, of Colorado. A dwarf form in N. Arizona (Ruxley). Asa Gray *Synoptical Flora of North America*, vol. i., part 2 (1884), p. 128. Coulter, *Manual of the Botany of the Rocky Mountain Region* (1885), p. 146.



FIG. 97.—LEPTOSYNE GIGANTEA.

1½ in. across; involucre of many rows of linear-acute bracts, the inner ones larger than the outer ones; ray florets bright yellow, spreading; disc florets tubular, yellow.

If this be really referable to Asa Gray's species, then it must be the dwarf form mentioned as collected in Arizona. We append Asa Gray's description, which differs in some respects from that we have drawn up from Mr. Henkel's specimens. M. T. M.

LEPTOSYNE GIGANTEA.*

For the opportunity of illustrating this fine Californian Composite (fig. 97), we are indebted to the kindness of W. E. Gumbleton, Esq. The flowers are of a pure yellow, resembling a single Dahlia, but of stouter substance, owing to the presence of a second row of ligules. The plant is 4 feet in height, and in September was covered with its handsome flowers. Unfortunately, it is not quite hardy.

ORCHID NOTES AND GLEANINGS.

TREVORIA CHLORIS (Lehm.).

THIS extraordinary representative of a new genus of Orchids was discovered by Consul F. C. Lehmann of Popayan, whose description of the plant, giving interesting particulars of its discovery, was published in the *Gardeners' Chronicle*, May 29, 1897; and in the same number a large illustration of it taken from Mr. Lehmann's drawing, formed the supplement. It was named in honour of Sir Trevor Lawrence, Bart., President of the Royal Horticultural Society, and our oldest and most ardent collector of Orchids. Explaining the name in the description, Mr. Lehmann says: "I have named this genus of Orchidaceæ in honour and commemoration of Sir Trevor Lawrence, one of the most enthusiastic orchidists that ever lived. *Trevoria* has to answer our purpose; *Lawrencia* and *Lawrencella* being already in existence in *Compositæ* and *Malvaceæ* respectively. May Sir Trevor's love of Orchids endure sempervirent, as *Chloris*, the goddess of flowers." The plant has now flowered in the Burford Collection, and proves to be as distinct from anything else in cultivation as its author indicated, its singular drooping racemes of yellowish or greenish-yellow flowers being very remarkable. It is attracting much attention, and it was hoped to retain its flowers until the Royal Horticultural Society's Show last week, but it passed too soon.

CYPRIPEDIUM CHARLESWORTHII.

A correspondent forwards a flower of this species, in which the standard (upper or dorsal sepal) is absent, and the two lateral sepals are enlarged and confluent, forming a broad petaloid mass like the standard, except as to position. There is only one petal, and that occupies the centre of the flower opposite the lip. One of the stamens expands into a whitish lobe, resembling a stigmatic lobe.

THE CONIFERS AT PAMPISFORD HALL.

THE *Report of the Conifer Conference of 1892* is a very interesting production; Conifers are discussed from a cultural point of view, especially for ornamental purposes. The economic question of growing them as remunerative crops for timber is slightly touched upon, and there are two long lists of Conifers that may be grown in the British Isles or in Denmark; there is also an able paper by Professor Marshall Ward on the diseases to which they are subject, and another by Professor Blandford on the insects that attack them. The report concludes with a number of lists of Conifers actually growing in various estates throughout the country.

Two things are wanting to render the book

* *Leptosyne gigantea*, Kellogg, in *Proceed. Californ. Acad.*, iv. (1870), 198. *Botany of California*, i. (1880), p. 355.

thoroughly useful: the first being a systematic description of the Conifers grown in Britain—room might easily have been found for this, had the British and Danish lists been combined; the other omission is a good account of existing British crops of Coniferous trees, chiefly from an economic point of view. A benefactor is still wanting who will plant sample areas of say $\frac{1}{4}$ acre each, or, better still, of 1 acre each, with pure crops of closely-grown Conifers; and, as the late Sir John Lawes has done for agricultural crops, keep a record of the yield from thinnings, of the cost of planting and maintenance, &c.—in fact, of the complete life-history of each crop, until it is mature and harvested.

Among the lists of Conifers grown on various estates is a very incomplete one of those in the grounds around Pampisford Hall in Cambridgeshire. This list gives a very inadequate idea of the fine collection of Conifers that were chiefly planted by the late Mr. Parker Hamond. The present owner of the estate, Captain J. Binney, of the King's Liverpool Regiment, has kindly permitted me to see his trees, and it was with great pleasure that I found so many varied Conifers in such fine condition.

Considering that the gravelly soil of the Cambridge University Botanic Garden will not allow many trees to grow there to anything like perfection, it is highly interesting that there should be such a good collection of Conifers, in private grounds, so near at hand.

The soil at Pampisford Hall is a loam above the chalk, about 3 feet deep, and containing gravel in a few places. The site of the plantation is generally flat, or only slightly undulating. The trees are most judiciously distributed. Those that withstand shade, such as various *Abies*, Douglas Fir, &c., being under light-demanding Pines; consequently, although they are still thriving, these plants do not grow as fast as others that are more exposed, yet they add greatly to the beauty of the woods. The broad-leaved trees usually grown on the Cambridgeshire chalk hills are the Beech, the Wych Elm, the Turkey Oak, and the Sycamore; and all these find their place among the Conifers in the Pampisford estate, the fallen foliage of the Beech affording valuable humus, so that the soil is throughout in excellent condition for the growth of trees. Beech here grows quite as well as in the Chiltern Hills, and tends to supplant other species. Cambridgeshire Larch, when grown on suitable soil, is very healthy; it is often planted in mixture with Beech—a good plan, provided the latter is not allowed to overcrowd it. The largest Larch in the Pampisford estate measures 3 feet 8 inches in girth at chest height, and is 50 feet high. There are some very fine Wych Elm and Sycamore in the neighbourhood, £70 having been recently offered for a Sycamore tree in Brabraham Park. There are a number of Turkey Oak growing among the Pampisford Conifers, and one tree on the lawn forms a picturesque object with its branches reaching down to the ground. The timber of the Turkey Oak is so worthless that it is a pity it is grown, and several American Oaks are much more ornamental, besides providing useful timber. There are a few Spanish Chestnut trees, but the soil probably contains too much lime for them, as they do not thrive at Pampisford.

It is a pity that all the trees in this fine collection are not named; my own knowledge of Conifers is but limited, and in the following remarks I have been obliged to omit the names of several fine trees. I have not, however, followed the regrettable insular custom of naming Silver Firs *Picea*, and Spruces *Abies*, but have reversed these names. All girths that I give are measured at chest height, and nearly all that are not shaded by other trees are from 50 to 60 feet in height. The only diseased tree I noticed was a Weymouth Pine, the head of which has been killed by a *Peridermium*. With this exception, every tree is healthy, and all that are not shaded by loftier trees are growing vigorously. In the list that appeared in the report of

the Conifer conference, it was stated that one or two of the trees had suffered from frost. The damage done must have been of a very temporary description, as I could not see a sign of it on any of the trees.

Scientific name.	Girth at Chest-height.	Remarks.
	Inches.	
<i>Abies cilicica</i> ...	...
<i>A. cephalonica</i> ...	75	
<i>A. balsamea</i> (concolor) ...	65	
<i>A. lasiocarpa</i> ...	36	
<i>A. Nordmanniana</i> ...	...
<i>A. pectinata</i> ...	...
<i>A. Pinsapo</i> ...	88	This tree branches down to the lawn.
<i>Cedrus atlantica</i> ...	140	Ditto.
<i>C. Deodara</i> ...	53	Ditto. There are many healthy specimens in the woods.
<i>C. [atlantica] cerulea</i> ...	...	Beautiful tree.
<i>C. Libani</i> ...	111	Branching down to the lawn.
<i>Cupressus alba</i> (?) ...	...	All the Cupresses are growing well.
<i>C. glauca</i> (?) ...	...
<i>C. gracilis</i> (?) ...	...
<i>C. Lawsoniana</i> ...	...
<i>C. Lawsoniana aurea</i> ...	...	A row of golden Cupresses makes a pretty show.
<i>Cryptomeria japonica</i> ...	...	Small but healthy tree, growing in the shade.
<i>G. Lobbi</i> ...	...
<i>Juniperus glauca</i> ...	...	There are many other Junipers, that I could not name.
<i>Libocedrus decurrens</i> ...	60	60 feet high. Very fine.
<i>Picea orientalis</i> ...	30	
<i>P. excelsa</i> ...	...
<i>P. pectinata</i> ...	92	
<i>Pinus austriaca</i> ...	83	Grows well on the chalk hills, even on the shallowest soils above them.
<i>P. excelsa</i> ...	...
<i>P. Hamiltoni</i> (?) ...	95	
<i>P. Haycutti</i> (?) ...	...
<i>P. Jeffreyi</i> (?) ...	78	Uncertain about the name of this Pine, which is one of the best grown in the collection.
<i>P. Laricio</i> ...	...	Grows admirably in the neighbourhood.
<i>P. macrocarpa</i> ...	23	Producing very large cones.
<i>P. pyrenaica</i> ...	...
<i>P. Strobus</i> ...	...	Poorly represented.
<i>Pseudotsuga Douglasii</i> ...	...	Ditto, but healthy.
<i>Salisburia biloba</i> ...	...	The Ginkgo (small).
<i>Sequoia gigantea</i> ...	77	There are several fine specimens.
<i>S. weeping variety</i> ...	...	Quite a vegetable curiosity.
<i>S. sempervirens</i> ...	83	60 feet high. This is one of the quickest girth-growing Conifers in Britain, attaining in the Windsor woods nearly 10 feet girth in forty-four years.
<i>Thuja borealis</i> ...	...
<i>T. gigantea</i> (Lobbi) ...	...
<i>T. Menziesii</i> ...	...
<i>Thuopsis dolabrata</i> ...	...
<i>T. borealis</i> ...	...
<i>T. Jeffreyi</i> (?) ...	78	

Mr. Howard, the gardener, is taking great care of the trees, which are now mostly between forty and fifty years old. *W. R. Fisher.*

FORESTRY.

AVENUES.

As already stated, the character of an avenue depends greatly upon the species of tree used in forming it. With heavily-branched or shade-bearing trees, we get a more or less unbroken wall of foliage through the summer, or of twigs in the winter, similar to a hedge on a large scale. With lighter furnished trees, the front presented to the eye is more broken and irregular, but still sufficiently uniform to satisfy the requirements of the case. Lime, Beech, Spruce, &c., furnish examples of the former; Elm, Oak, Larch, and Scots Fir of the latter. More important than density of branching, however, is erectness of habit, and the faculty of preserving a straight and perpendicular mainstem until late in life. Most Conifers give little trouble in this respect; but very few hardwoods can be depended upon, unless drawn up by nurses. The best, however, are those most frequently used, Lime and Elm, and the worst Oak. Beech, owing to its forming a dense head when isolated, is apt to grow more in breadth than height, and requires pruning to give it the desired shape in most cases. The black Italian Poplar makes a well-balanced

tree, and in wet situations is probably as good as any for the purpose. But of all trees, the first place must be given, in my opinion, to the Lime, whether for symmetry, beauty of leaf, twig, or stem, or its freedom of growth on most soils and situations. It is true, that after a dry summer, it often puts on an autumnal tint before the majority of trees, but it makes up for this defect by furnishing earlier in the season, and when most trees have assumed their sombre green of midsummer, a heavy crop of sweet-smelling, and not altogether inconspicuous flowers, which, together with the bracts of the flower-stalks, almost entitle it to rank among the ornamental flowering-trees. Another, and by no means unimportant advantage of the Lime, is the fact that it is an ornamental tree when still in its youth, and has rarely to go through that awkward stage of existence which often necessitates the use of the pruning knife to preserve symmetry, and properly balanced parts. It preserves its shape till an advanced age, and a Lime avenue from youth to decay, may be safely trusted to fulfil the purpose for which it was planted.

With the older planters, the English Elm was a great favourite for avenues, the species probably being introduced with the method of planting it from the Continent. When in its prime, its towering height, handsome foliage, and massive stem and branches, form an imposing spectacle, but it has a nasty habit of dropping its branches suddenly, and without any warning, in spring and summer, and on this account, is not only dangerous to those passing below, but renders the tree itself ragged, and the stem bare. In consequence of this, Elm avenues in old age lose a great deal of their symmetry, and earn for themselves the adjective applied by Gray "ragged," a feature not altogether displeasing when found in a landscape of a flat or tame nature.

The Horse-Chestnut is a tree frequently used for avenues, more probably on account of its massive clusters of flowers in spring, than for any special suitability of the tree for the purpose. The Chestnut avenues of Bushey Park are familiar to most Londoners, and when in flower form a fine sight; but when this period is over, there is nothing particularly attractive about them. Like the Beech, the Horse-Chestnut is inclined to be round-headed, giving the avenue a low, squat appearance; while the tree itself is not particularly long-lived, a very desirable quality in an avenue-tree.

Amongst Conifers, few trees surpass the common Spruce for height and regularity of form, but it must be planted in a sheltered situation out of the reach of cold, drying winds, or destructive gales. Its tall, cylindrical crown of pendulous branches, renders an avenue of this tree one of the most imposing objects that can be imagined, but it is only in suitable soils and situations that it arrives at perfection, and retains its lower branches to the last.

Both the Larch and Scots Fir make good avenue trees, if they can be got to grow with well-furnished stems. Of the two, the Larch is the more easy to manage in this respect; but the Scots Fir, if it can be induced to clothe itself with long feathery plumes of foliage, is by far the more handsome of the two.

Of the more ornamental kinds of Conifers, those adapted for avenues are too numerous to mention. But for ordinary park purposes, those already enumerated are preferable in many ways to species which are more in keeping with the pinetum or pleasure-ground, where short avenues of such trees have often a fine effect, instances of which can be found throughout the country.

Of mixed avenues, we have little to say beyond the fact that their character is also mixed, and a great deal of the dignity that should distinguish them disappears. When only two kindred species are used, the effect may be fairly satisfactory, but when consisting, as is sometimes the case, of a mere jumble of trees, the avenue becomes a poor affair, however good the species employed may be in themselves. Avenues are best made up of one species alone, and the site chosen for them should be one where soil and situation are sufficiently uniform to promote a uniform growth. *A. C. Forbes.*

(To be continued.)

NOVELTIES.

THE two plants illustrated (fig. 98, and fig. 100, p. 328) are among those we noticed in a recent visit to the nurseries at Linthout (see p. 302). They formed part of the group of new plants from the Belgian Congo, exhibited by M. Linden at the Paris Exhibition.

ARDISIA BRANDNERIANA (Hort. Linden).—A dwarf species with shining, undulate leaves.

ALSOPHILA LOUBETIANA (Hort. Linden).—A very elegant species named in honour of President Loubet.

THE PAST LILY SEASON.

NOTWITHSTANDING adverse atmospheric influences, which still prevail, many of the finest Lilies that adorn our gardens have flowered marvellously here (S.W. Scotland) during the season of bloom. Their long reign began with *Lilium davuricum*, a

worthy of publication. At the end of the season I discovered no fewer than nine offsets at the roots of this grand Lily, the largest of which were planted in favourable positions; these will only send up foliage, without any central stem, for the next three years. As a general rule, *Lilium giganteum*, when grown from offsets, takes about four years for its adequate development, before it reaches its period of bloom. During that time, the patience of the ardent cultivator who does not understand its nature, may become almost exhausted, and his hopes may seem in vain; but to him who is conversant with its nature and characteristics, such impatience is impossible, for he knows that in due time he will have his reward. What, indeed, is the value of gardening to the higher nature, unless it draws out, by its strengthening influence, man's loftier moral powers?

I much regret to say that the beautiful Madonna Lily, whose classical name, conferred upon it by Virgil, is *Lilium candidum*, was not a great success in Scotland this year. From various regions of

festly instinctively sympathised with the experiences (chiefly atmospheric) of its other progenitor, *Lilium candidum*.

But when those extremely beautiful Japanese Lilies, *L. longiflorum* and *L. auratum* appeared, they made for such occasional failures on the part of their predecessors divine amends. Especially commanding in their majesty were the flowers of that noblest of autumnal Lilies, entitled by reason of the breadth of its segments, *Lilium auratum* var. *platyphyllum*, whose loveliest companions were those early-flowering speciosums, *Kraetzeri* and *Melpomene*, whose aspect is as graceful as their fragrance is refined. *David R. Williamson.*

TREES AND SHRUBS.

THE COCK'S SPUR THORN

(*CRATEGUS CRUS-GALLI*).

SEVERAL of the Thorns have been particularly fine this autumn, on account of their wealth of fruit. *C. macracantha*, *C. coccinea*, and some of the finer forms of *C. oxyacantha* have been especially noticeable; but *C. Crus-galli* is, as a fruit-bearing tree, perhaps the best of all, for not only are its haws of a fine bright red, but they remain on the branches till winter, long after those of most other species have fallen. During the sunny afternoons of late September and the present month, they have made one of the brightest pictures in the garden. There are several varieties of the Cock's Spur Thorn, which vary chiefly in the size and shape of the leaves. In the varieties *C. ovalifolia* and *C. prunifolia* they are broad and rounded; whilst in *C. linearis* and *C. pyracanthifolia* they are narrow—always, however, glossy, dark-green, and of firm texture. The species in all its forms, but more especially the narrow-leaved ones, has a strong tendency to send out its branches horizontally, and to form a wide-spreading, flat top, increasing very slowly in height unless a lead is tied up. This habit, however, is picturesque, and gives the species a very distinct character that renders it an admirable tree for growing as an isolated specimen on a lawn. *C. Crus-galli* is widely spread over the eastern side of North America, from Canada to Florida.

LARIX OCCIDENTALIS.

Growing on the spurs of the Rocky Mountains, in several of the western states of North America, this Larch is met with as a noble tree, reaching to from 100 feet to 150 feet in height, and with a trunk 3 feet to 5 feet in diameter. Its timber, being hard and strong, and very durable, renders it an extremely valuable tree. So far as its cultivation in this country is concerned, very little appears to be known of it. At the Conifer Conference at Chiswick in 1891, no particular mention of it appears to have been made, and nothing is recorded in the *Report* as to its behaviour in this country. Living specimens appear to be rare in the British Isles. At Kew there is a promising group in the Arboretum. The largest of these trees are 10 feet to 20 feet high, and during recent years have grown quickly. It would be interesting to know if this "Western Larch" has been tried in any of the pineta of this country, more especially in the great Larch districts of the north. Small trees, both in habit, leaf, and general aspect are very similar to the common Larch. The other American Larch, found in the Eastern States (*L. americana* or *L. pendula*), appears to possess little or no attractions. On the dry soil at Kew it is quite a failure; this, however, may well be, for it is described as chiefly affecting low, moist situations—occasionally cold swamps; whereas the western species inhabits drier, more elevated regions.

THE SPINDLE-TREE (*EUONYMUS EUROPEUS*).

There are few of our native trees or shrubs more beautiful at this season than the common deciduous *Euonymus*. It is a goodly-sized shrub, occasionally



FIG. 98.—*ARDISIA BRANDNERIANA* (HORT. LINDEN).

native of Siberia, and ended with the Japanese *Lilium speciosum*; several of whose later varieties are flowering still, though under conditions of the most adverse description. *Lilium davuricum*, whose most effective forms are erectum and incomparabile, the latter being especially artistic in effect, was succeeded in my own garden by *Lilium Washingtonianum*, a most beautiful Lily of Californian origin, of the most delicate fragrance, which should be planted by the cultivator in various situations—by reason of its capriciousness—till the proper one is found. When once strongly established, as I know from long experience, it will come up regularly, and blossom luxuriantly every year.

Lilium Washingtonianum is usually succeeded by the great Himalayan *Lilium giganteum*, which however for reasons to be easily explained, did not bloom with me this year. Last season I had only one magnificent specimen, which grew to a height of over 10 feet, and produced a large number of most impressive flowers. It was photographed for the *Gardeners' Chronicle* by Mr. Douglas McDowall, of Logan House, but as the day was very sunless, and the light intermittent, the result was not sufficiently successful to be

this romantic country I have heard of a similarly comparative failure; blooming well in certain situations, and utterly failing in others, from no obvious cause. From what I know from observation of the nature of this richly-endowed and nobly-artistic Lily, I am strongly convinced that it does not tolerate deep planting; that it likes its strong and vigorous roots to get plenty of fresh air. You may plant it this season to a considerable depth; in a few years it will be found quite close to the surface of the ground. Let us therefore not stand in the way of Nature when planting *Lilium candidum*, for that this exquisite Lily objects strongly to being buried, I cannot but believe.

Very gratifying was the success of the great Martagon group in my garden this year, especially *Lilium Szovitzianum* (a variety of *L. monadelphum* generally obtained in the remote regions of the Caucasus); and *Lilium chalcedonicum*, the Scarlet Martagon. It is a pity these grand Lilies do not flower contemporaneously, as they would present a striking artistic contrast if grown side by side. *Lilium excelsum*, unlike its Martagonian parent, of which I have just been writing so favourably, was, contrary to my expectations, not a success, it mani-

almost a small tree, and at the present time is loaded with its vividly-coloured fruits. During September these fruits are of a bright rose-colour, and are then very pretty; but it is in October that they become most striking, for then they split and disclose the bright orange-coloured seeds within. Owing, probably, to the splendid ripening summers of recent years, this shrub has fruited abundantly each autumn, and this year is no exception. Loudon remarks that in cultivated ground the Spindle-tree reaches 30 feet and upwards in height. I have not myself noticed it so big, or, indeed, more than half as high; but no doubt specimens of the stature he mentions are to be met with. The flowers are merely small and pale-green—quite insignificant. The plant is one whose requirements are easily satisfied—any ordinary soil suits it. There is one point, however, in its cultivation that may be mentioned: it is very subject to the attacks of a caterpillar, which clusters in webbed masses on the leaves about the time it flowers. If these caterpillars are not destroyed, the crop of fruit may be partly or wholly missing in autumn; but one or two syringings with a solution of Paris Green, or other arsenical compound, kills them. Of several varieties of the Spindle-tree, the most distinct is the one (*fructu-albo*) which has white instead of rose-coloured fruits.

ILEX SIEBOLDI.

The section of the genus *Ilex*, the species comprising which are more generally called *Prinos*, is not particularly well known in gardens; yet it contains several handsome and interesting plants. Most of them differ from the *Hollies* of the *Aquifolium* type in having deciduous leaves; but, like them, their main attraction, beyond that which belongs to the foliage, is in the fruits. Two species—*I. verticillata* and *I. glabra*—are offered in catalogues, the former having red, the latter black fruits; both are striking when bearing a full crop. These two species are North American, but *I. Sieboldi*, a species comparatively new to this country, is a native of Japan. In a state of nature it is a bushy shrub 12 feet to 15 feet high, affecting moist positions near streams, &c. It has ovate, pointed leaves, deciduous, 2 inch to 3 inches long, finely toothed at the margin, prominently veined, and dull green. The roundish or slightly conical fruits are about the size of large shot, and vary much in colour. Typically they appear to be scarlet; but there are varieties at Kew with white and yellow berries. The species promises to be attractive when well-established. Prof. Sargent says that in Japan the branches of this shrub—leafless, but covered with berries—are sold in immense quantities in the streets of Tokio for the decoration of dwelling-houses. For this purpose they are admirably suited, because the berries remain on the branches, and retain their colour for a long time. *W. J. B.*

THE FERNERY.

ASSOCIATED WILD FERN VARIETIES.

By the courtesy of a gentleman in Cornwall, I have just received fronds taken from three marked varieties of three different species of Ferns, all growing in one clump in a wood on his estate, viz., a beautiful form of *Polypodium vulgare* of very robust habit, the fronds having pinnae about 4 inches long, and divided throughout into pinnules, of which the basal ones are fully $1\frac{1}{2}$ inch in length. At first sight there is a strong resemblance to *P. v. cambricum*, but the texture is normal, a few sori are on the frond sent me, and the general make is too acuminate for that section, independently of the fertility, so that it must be relegated to the *innuleceum* section, of which it is a very fine example. The second Fern is a neatly crested form of *Lastrea pseudo-mas*, with small tassels at all tips, much smaller than the old King of the Male Ferns, which, by the way, was also found in Cornwall,

but quite thoroughbred. The third is a foliose subtripinnate form of *Polystichum angulare*, with most of the pinnae polydactylous, thus differing markedly in two respects from the normal, although on account of its irregularity it ranks far behind the other two associated Ferns in value.

Considering the extreme numerical rarity of well-marked variations and their usually isolated character, this find, under wild conditions, of three marked forms of three different species constitutes to my mind a quite unique occurrence. I have myself found two different varieties of two different species associated, so far that they were within a foot of each other on the edge of a mill-leet or artificial channel on Dartmoor, the one a depauperate *L. montana*, the other a foliose subcruciate *Blechnum spicant*. In that instance precisely the same environments (if environment be an inducing cause, which I doubt) led to precisely opposite results; but in the case under notice, all three forms are redundants, the *Polypody* especially so, and here, of course, extra congenial conditions may be a factor in the development, the *Polypody* becoming abnormally foliose, and its companions finding an outlet for extra energy in the shape of multifid terminals. *C. T. Drury.*

KEW NOTES.

HABENARIA LUGARDI was described by Mr. Rolfe in the *Flora of Tropical Africa*, vii., p. 228, from specimens collected in N'gamiland by Major F. D. Lugard. Tubers of it were presented to Kew by Mrs. Lugard, and one of them is now in flower. It is a remarkable and, for a *Habenaria*, an attractive species, the spike being 2 feet high, bearing a dozen white flowers nearly an inch across, with a tripartite lip, with filiform lateral lobes, and a straight drooping spur 6 inches long. The leaves, of which there are two, are broadly suborbicular, spreading flat on the soil, and 4 inches long by 6 inches broad, very fleshy, brittle, and bright green. A figure of it has been prepared for the *Botanical Magazine*. *W. W.*

FLORISTS' FLOWERS.

EARLY CHRYSANTHEMUMS.

THESE are useful from several points of view, the chief, perhaps, being their freedom in flowering and the great service they render to the suburban amateur in cutting for decorative purposes in the home. Most of the older varieties were of the Pompon type, but of late years the raisers have endeavoured to turn the Japanese section to account, and the consequence is that we have now a very large number of valuable additions of every shade of colour to choose from.

The more noteworthy varieties that I remarked in a French nursery recently were:—*Madame Jacob*, very full, and double, a Japanese, with medium florets, colour reddish-crimson; *A. Beuret*, reddish terra-cotta, golden reverse; *Jules Mary*, small, but very free, colour a deep reddish-crimson, with bronzy reverse; *M. G. Menier* deep rosy-amaranth; *Madame R. de Molmain* deep golden-yellow, shaded carmine; *Mytchett Beauty*, Japanese, of large size, long florets, deep golden-yellow; *Madame Liger Ligneau*, also a large yellow; *Ch. de Cazenove*, deep rosy-amaranth with silvery reverse; *Ami Boumann*, very free, pale mauve-pink, reverse silvery; *President Ed. Barré*, deep velvety-crimson, reverse bronze; *C. A. de Wit*, Japanese, with long florets, white tinted pale purple; *Alfred Fleuret*, a pretty shade of deep rosy-pink; *Orange Marie Masse*, colour deep orange-bronze; *Market White*, large, colour deep sulphur-white; *Paul Valade*, very effective, the long florets are of golden amber, shaded bronze; *Molière*, pretty rose-purple with golden centre; *Incomparable*, pure white, very free. *C. Harman Payne.*

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of PORTLAND, Welbeck Abbey, Workson.

Peaches and Nectarines.—One of the greatest boons to the gardener who has much fruit-forcing to carry out was the introduction of new early-fruited varieties of Peaches and Nectarines. Those who still rely upon the older early varieties should gradually substitute new ones for these, as among other benefits accruing is the lessening of the coal-bill, almost two months being saved in point of time. In Waterloo, Hale's Early, and Early Alfred Peaches; and Cardinal, Early Rivers', and Lord Napier Nectarines, we have fruits that nearly correspond in their season of ripening. These are good and sure forcers, and to have ripe fruits in the month of May, it is only necessary to begin forcing at the new year. Where Royal George and Violette Hâtive Peaches, and Elruge and Violette Hâtive Nectarines, are still relied upon for early fruit, the trees should be pruned and put in order at the present time, so that forcing may begin by the end of November. In pruning the shoots of aged trees, shorten them to triple buds, and if the trees have made weak growth, remove the surface soil 6 inches in depth; then afford the border a copious application of strong farmyard liquid-manure, and fill in with rich turfy-loam, together with a large quantity of mortar-rubble and charred earth, or burnt refuse, then apply more water, finishing off with a mulch of short stable-litter.

The Late Peach-house.—Where the crop of fruit was assisted in the ripening with artificial heat, the shoots will still be green. A check should be applied. The green points should be cut back to a point where the shoots are mature, and the shoots that have borne fruits this year removed. If the shoots are still crowded, about half the foliage should be removed with a pair of shears. This will do good to the trees without causing injury to the buds.

Pot Vines.—To have Grapes in the month of April and May, start some pot Vines about the middle of the present month, selecting strong canes. The pots should be stood on a firm bottom not far from the glass, and fermenting tree-leaves and stable-litter piled below and around these, being careful not to exceed 60° bottom-heat at the start. The top-heat may range between 50° to 55°. Immediately below each pot a layer of mellow pasture-loam and decayed manure should be placed, into which the roots find their way through the holes at the bottom. The only top-dressing that I apply is a 5-inch potful of wood-ashes and soot, scattered over the surface of each pot.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Celogyne cristata.—Plants now developing flower-scapes, should be kept in a dryish atmosphere, or the bracts will decay; weak manure-water may still be applied. Plants of *C. Sanderiana*, which have finished their growth, place in a light part of the Cattleya-house, and keep moderately dry, only affording water when much shrivelling occurs. *C. Massangeana* should be grown at all times in the Cattleya-house, and at this season afford it very little water. *C. Dayana* and *C. tomentosa*, are species that need stove treatment, and as they should have done growing, complete rest should be induced by withholding water for so long a time as the bulbs keep plump. *C. barbata*, *C. ocellata*, *C. corrugata*, and *C. flaccida*, are intermediate-house species, needing water very seldom throughout the winter. The semi-deciduous *C. Schilleriana* should be hung up to the roof in the Cattleya-house at this season, and be afforded water but seldom till growth recommences. Place *C. pandurata*, *C. asperata*, and *C. Micholitzii*, in a light warm part of the East India house, and apply just enough water as will keep the materials slightly moist. A low temperature occurring whilst the materials at the base of the first-named species are in a very moist state, is apt to set up decay.

Sobralia macrantha and large specimens of other species of *Sobralia*, should now have all stems that have flowered removed, and those that remain rearranged and tied out so as to expose them to all the light that reaches them. Frequent slight fumi-

gations should be afforded, and the leaves sponged if infestation by red-spider or thrips is feared. Let water be applied only when the soil is becoming dust dry, and mixing manure-water with it for those whose pots and tubs are filled with roots.

Phaius grandifolius should be afforded a temperature of 60° to 65°; and as the plant has done growing, much less water than heretofore will be needed. If greenfly appear on the flower spikes, fumigate lightly frequently. *P. tuberculosus*, a warmest house species, has also finished its growth, and the strongest growths may be expected to produce flowers. If the drainage is good, water may still be applied, otherwise great care in this matter will be needed. Let the leaves be frequently sponged with soapy water. Rest *P. Humblotii* in the cooler part of the Cattleya-house, and afford water but seldom. *P. × Cooksoniae*, *P. × Normanii*, and other hybrids of this section, succeed in a moderately warm, and not over sunny position, and the plants being still in an immature state, should be afforded water before the materials get very dry. Stagnant air, combined with a low degree of heat, will cause spotting of the leaves, or other more serious injury.

Fogs.—We may expect these any day after this date, and the gardener must endeavour to lessen their evil effects on his plants by keeping the air of the houses and the plants fairly dry, the temperature even, and affording no ventilation by the usual openings. At night the blinds, if they are still on the roof, should be let down, and thus help to minimise the effects of fireheat, and hinder the entrance of fog to a certain extent.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt Tisbury, Gloucestershire.

Asparagus.—Beds which were top-dressed in March last, and have been liberally treated in the summer, may receive a layer of spent hops, 3 inches in thickness. *Asparagus* growing on heavy land should not be afforded any manurial dressing at this season. In stiff soils it is well to raise the beds 1 foot above the general level of the garden. Beds which have been planted some years in this way, and annually top-dressed, usually afford less than an average crop, due to the depth at which the crowns lie. The proper practice is to take off with a digging-fork, not inserted deeply, a layer of the soil 3 inches or more in thickness all over the bed, and transfer it to the alleys before putting on the new top-dressing. Although well-prepared beds will last in good bearing condition for many years, it is prudent to make a new bed annually in a well drained part of the garden; and if the soil is naturally heavy, sand, road-grit, and well-rotted manure should be added to the staple in the preparatory trenching of it. These materials should be got in readiness, and be mixed together so as to be fit for use in December, when they may be spread on the soil and left till the beds are planted early in the spring.

Celery.—Finally mould up the late crops, setting experienced men at the job, for if the moulding be carelessly done, rain and melted snow penetrate the soil, and set up decay in the plants. Break up the soil finely, and place it round each plant up to about 6 inches of the top of the leaf-stalk, beating it smooth with the back of a spade. Should heavy rains occur in November, and the water lie in the furrows between the ridges, loosen the bottom of the former, and place bracken or straw over the ridges before hard frost sets in.

Onions.—If growth has been rapid, trample the ground between the rows of plants, thinning having been previously carried out. Dressings of soot should still be afforded if insect pests prove troublesome.

Tomatos.—Some gardeners apply top-dressings at this season to potted plants; but if the compost is good, and the plants grow freely, these aids to growth are unnecessary now, although they may do good further on. Ventilate the plants freely on every favourable occasion, and close the structure early in the afternoon, so as to obviate the need of much fire-heat. The temperature should not fall below 60°. The flowers should now be pollinated at mid-day, or the flowers or embryo fruits will fall off. Tomato plants in this stage derive enough moisture from the daily syringing of the floors; but plants in full bearing will require alternately water with which liquid-manure is mixed, and clear water.

Cauliflowers.—About six weeks ago I wrote of the advisability of making two sowings of Walcheren Cauliflower-seed. The plants of the first of these sowings may be planted where they will stand for the winter—that is under handlights, and afforded air whenever by day there is no actual frost, and by night also if no hard frost appears imminent. If handlights or cloches are not available, plant them in cold frames at a distance of not more than 9 inches from the lights, and at 5 inches apart. Do not lift all of the plants at one time, but a score or so, and thus not expose their roots for any length of time to the air. Apply soot and wood-ashes occasionally, and be sure not to coddle the plants.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Repairing Garden-walls.—Where wall fruit-trees are secured with nails and shreds, the face of the wall becomes in time full of holes, which afford hiding places for insects of all sorts. The present is a good time to point the courses, and stop the holes. Well-made ordinary mortar should be used, not cement, which is too hard. Put the coping in good order, filling up defective joints. Coping joints are best made good either with red or white lead, which are more durable than cement. Very old walls which will not pay for pointing, should be coated with cement concrete, giving the whole a finishing coat of cement and fine sand when the former is quite dry. Such walls should be wired, the necessary studs, hold-fasts, and straining-bolts being fixed before the facing is applied. To make the wash more adhesive and lasting, some boiled linseed-oil may be mixed with the lime while it is slaking. In order to ensure the same tint throughout, mix sufficient at the outset to wash the entire wall.

Wiring walls.—The wires should be fixed at 9 inches apart, and so close to the face that there is just sufficient space to pass twine or strands of raffia round behind the wire. If this is done, the objection to wiring on account of the trees standing so far away from the face of the wall is then done away with. When completed, give the wires two coats of white-lead paint. [In order to dispense with straining-bolts, the wire may be fixed perpendicularly to cast-iron studs with eyes or knobs at 8 inches apart. ED.]

Trellises for training Cordon Gooseberries, Raspberries, Brambles, and fruit-trees may now be erected, as the work can be done so much more expeditiously while the weather is open.

Current work.—Persevere with root-pruning and lifting, and open out holes on ground to be planted, and place some suitable mixture of soil, &c., for mixing with the staple in covering the roots. The necessary tree-stakes should be got in readiness, charring the butt-ends, and dipping them afterwards in tar. Where rabbits and hares are troublesome, put wire-netting 4 feet high round the plots where the trees stand, putting 9 inches of it under ground.

Standards planted on Grass-land from Stock.—The methods of doing this were alluded to in our report of the last meeting of the Royal Horticultural Society in these pages last week.

PLANTS UNDER GLASS.

By T. EDWARDS, Plant Foreman, Royal Gardens, Frogmore.

Lapagerias that need more rooting space may now be repotted. The plants would succeed better, however, if they were planted out in a cool house with a northern aspect, in a well made and properly drained border. A suitable compost for use in potting consists of two parts good peat, one part fibrous-loam (broken by hand and left in a lumpy condition), mixed with charcoal, broken crocks, and a considerable quantity of silver sand. In this the fleshy roots may ramble freely. Let the pots be well drained, and cover the crocks with fibre from which the soil has been shaken. *Lapagerias* require abundance of water when the plants are growing, and it should be possible for this water to filter through the soil freely. Old plants require ample root space, and if the roots are found to be in a healthy condition, the plants may be afforded pots or tubs three sizes larger than they have had previously. The roots are brittle, and if these are matted together it will be safer to transfer the ball without disturbing the crocks. With a pointed

stick many of the fibrous roots may be released, and some of the spent soil removed. Insert the roots in the pot at such a depth as will provide space for a top-dressing. Spread out the roots in the new soil, and make all firm with a rammer. Afford the plants a good soaking with water, and spray the foliage occasionally. No more water may be required until active growth is apparent, and being nearly hardy, the plants need only sufficient heat to keep out frost.

Chrysanthemums.—Afford a little ventilation night and day, with just sufficient heat in the pipes to dispel damp. When the flowers have developed fully, discontinue the use of stimulants. Careful watering is very necessary; examine the plants in early morning, and again at noon, so that water may not be afforded late in the day. Specimen blooms will need some light shading during bright sunshine. Late-flowering and decorative varieties should be fully exposed to light and sunshine now, and be afforded ample ventilation.

Lily of the Valley.—Pot up or plant crowns into boxes as required. With "retarded" crowns there is now no difficulty in forcing this Lily into flower at this time of year. No bottom-heat is required as they start, and the temperature should not be higher than 55° to 60°. Cover the crowns with damp moss, and shade heavily until the flower-stems are a good length. Any light soil or cocoanut fibre refuse will do to plant them in, as the crowns are not worth keeping after they have flowered.

Primulas.—If a few seeds be sown now, and the seedlings cultivated on a shelf in a warm house during winter, they will make fine plants for flowering early next autumn.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of ILCHESTER, Abbotsbury Castle, Dorsetshire.

Work in the Rock Garden.—Examine the plants, and if any appear weak, lightly loosen and clear away the soil, which, through watering and hardening by the sun's rays, is now unsuitable. Some finely-sifted soil, composed chiefly of clear coarse sand one part, to two parts each of best leaf-soil and good yellowish loam, would suit the majority of alpine plants; place this carefully about the plants by hand, and use a flat-tined handfork for fixing the soil firmly about the base. Neat pieces of broken sand-stones or granite may be placed near the collar of each. Hardy *Cypripediums*, *Zephyranthes Atamasco*, *Z. candida*, *Z. carinata*, *Z. rosea*, &c., and *Nerine Fothergillii*, *N. pulchella*, *N. pudica*, and *N. undulata*, &c., also the *Watsonias* in warm, sunny positions, may be wintered outside if the tubers and bulbs be covered with a coating of such compost. Small hand-lights, pentagonal in shape, 10 to 12 inches in diameter, which may be easily made to fit between the rocks or pockets, are the most useful while the bulbs are at rest, and not quite so glaring as the cloche or bell-glass. In the cases of hardier plants, some 3-inch wire gauze, with three supports or legs, at sufficient width for covering may be fixed to prevent removal of the soil from the crowns. The Cob-web plant, *Sempervivum arachnoideum*, and hardy *Opuntias*, as *O. brachyantha*, *O. humilis*, *O. missouriensis*, *O. vulgaris*, thrive best where the rain does not fall directly upon it, as under a projecting ledge of rock facing south. Divide such plants as *Monarda fistulosa*, *Stachys coccinea*, *Lychnis*, *Iberis*, *Helianthus*, and *Saxifraga*, and plant the divisions in the herbaceous border.

Carnations.—Layers may now be severed and planted out in their permanent position, at distances of 18 inches from plant to plant. If a garden be very cold and damp, it is safer to pot-up the layers into 48's, using a rich loam, and coarse grit and leaf-soil. Place at the bottom of each pot a patent wire-gauze worm-protector. After potting, place them in the light, airy pit, and give free ventilation until severe weather occurs.

Lawns.—Eradicate such weeds as are robbing the turf, drawing out as many of the roots as possible. Afterwards give the grass a top-dressing of fine, rich soil, containing a good proportion of fine bone-meal and soot.

PUBLICATIONS RECEIVED.—The second edition of *Vitch's Manual of the Conifers*, by A. H. Kent (James Veitch & Sons, 544, King's Road, Chelsea), has been received; and the second part of the new edition of the *Gardener's Assistant*, edited by Mr. W. Watson (The Gresham Publishing Company, 25, Farringdon Avenue).

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR NOVEMBER.

TUESDAY,	Nov. 6	Royal Horticultural Society's Committee.
		National Chrysanthemum Society's Autumn Show at the Royal Aquarium, Westminster (3 days).
		Chrysanthemum Shows at Birmingham (3 days), Plymouth (2 days), Southampton (2 days), Brighton (2 days), Coventry (2 days), Stratford-on-Avon (2 days), Hanley (Staffs) (2 days), Kingston (2 days).
		Mr. J. K. King's Root Show at Coggeshall.
WEDNESDAY,	Nov. 7	Chrysanthemum and Horticultural Shows at Cardiff (2 days), Halifax; Bournemouth (2 days); Woking (2 days), Lowestoft (2 days), Thanet, Bromley (2 days), and Horsey.
		Chrysanthemum and Horticultural Shows at Exeter (2 days), Windsor, Launceston, Bury (Suffolk) (2 days), Wandsworth (2 days).
THURSDAY,	Nov. 8	Sheffield Chrysanthemum Society's Show (2 days), Waterford Horticultural Society's Show.
FRIDAY,	Nov. 9	Chester Paxton Chrysanthemum Show (2 days), Belfast Chrysanthemum Exhibition (2 days), Highgate Chrysanthemum Show (2 days), Leeds Paxton Chrysanthemum Show (2 days), Folkestone Chrysanthemum and Fruit Show (2 days), Devizes Chrysanthemum Show, Winchester Chrysanthemum Show.
TUESDAY,	Nov. 13	Hull and East Riding Chrysanthemum Society's Show (2 days), York Florists Chrysanthemum Show (3 days).
		Vegetable and Farm Root Show at Messrs. Harrison & Sons', Leicester.
WEDNESDAY,	Nov. 14	Evesham Chrysanthemum Show, Buxton Chrysanthemum Show, King's Lynn Chrysanthemum Show (2 days).
THURSDAY,	Nov. 15	Scottish Horticultural Society's Chrysanthemum Show, Edinburgh (3 days), Manchester Royal Botanic Society's Chrysanthemum Show, Parkstone Chrysanthemum Show (2 days).
		Bolton Horticultural Society's Chrysanthemum Show (2 days), Bradford Chrysanthemum Show (2 days), Macclesfield Chrysanthemum Society's Show (2 days).
FRIDAY,	Nov. 16	Brockburn Horticultural Society's Chrysanthemum Show (2 days), Middleton Chrysanthemum Society's Show (2 days).
SATURDAY,	Nov. 17	Royal Horticultural Society's Committee at the Drill Hall.
TUESDAY,	Nov. 20	Dundee Chrysanthemum Society's Show (3 days).
THURSDAY,	Nov. 22	Aberdeen Chrysanthemum Show, (2 days).
FRIDAY,	Nov. 23	

SALES FOR THE ENSUING WEEK.

MONDAY, Nov. 5.—Dutch Bulbs at Protheroe & Morris' Rooms.—Highly important three days' unreserved Sale of Nursery Stock at the Ottershaw Nurseries, near Chertsey, by order of Mr. George Fletcher, by Protheroe & Morris at 12 o'clock (three days).—Lily of the Valley Crowns from Berlin, Hardy Plants, Azaleas, Bulbs, &c., at Mr. Stevens' Rooms, King Street, Covent Garden, London, W.C.

TUESDAY, Nov. 6.—Dutch Bulbs at Protheroe & Morris' Rooms.

WEDNESDAY, Nov. 7.—Dutch Bulbs at Protheroe & Morris' Rooms.—Great Sale of Japanese Lilies, Continental Plants, Roses, &c., at Protheroe & Morris' Rooms.—Hardy Flowering Shrubs, Liliums, Palms, Azaleas, Bulbs, &c., at Mr. Stevens' Rooms.

THURSDAY, Nov. 8.—Dutch Bulbs at Protheroe & Morris' Rooms.—Sale of well-grown Nursery Stock at the Burnt Ash Hill Nurseries, Lee, by order of Messrs. B. Maller & Sons, by Protheroe & Morris, at 11.30.—Palms, Plants, Bulbs, &c., at Mr. Stevens' Rooms.

FRIDAY, Nov. 9.—Dutch Bulbs at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—44° F.

ACTUAL TEMPERATURES:—

LONDON.—October 31 (6 P.M.): Max. 65°; Min. 55°.

November 1.—Dull; warm; moist.

PROVINCES.—October 31 (6 P.M.): Max. 59°; S.E. Counties; Min., 47°; Helvidres.

ED. PYNAERT.

It is difficult to express the sense of loss caused by the death of EDWARD PYNAERT. He was born in Ghent in 1835, lived an active and useful life in that city, and died there on October 28, after a long and painful illness. That is a brief summary of his career! Those who knew him can easily fill out the details. For our own part, we first knew him when he was engaged in LOUIS VAN HOUTTE's establishment. Even then, if we mistake not, he was a Professor in the Government School of Horticulture. In association with the Comte DE KERCHOVE and with VAN HULLE, RODIGAS, and BURVENICH, he threw himself with zeal into every horticultural movement, whether in connection with the great quinquennial meetings for which the city is famous, the meetings of the Société d'Agriculture, the Syndicate of Horticulturists, the lectures at the School of Horticulture, or the demonstrations in Flemish given to the farmers in the villages and towns of Belgium. The *Bulletins d'Arboriculture*, &c., the *Revue de l'Horticulture Belge*, also attest the energy and continuous labour of PYNAERT and his companions. So famous did PYNAERT and his three associates become, that they were spoken of as the "four-leaved Shamrock." Two of the "leaflets," MM. RODIGAS and BURVENICH, are still with us.

PYNAERT was not only an earnest horticulturist, he was a good citizen, and did not spare himself when there was work to be done. He was Vice-President of the Syndicate of Belgian Nurserymen, a Judge in the Tribunal of Commerce, and a Town Councillor. With all this, he managed a large nursery establishment, now conducted by his son, M. CHARLES PYNAERT, and achieved reputation as a landscape gardener.

Personally, he was frank, loyal, high principled, always willing to render aid when required, ever solicitous to oblige—a man with whom to be associated was to respect—a friend whom to know was to love.

The System of "Retarding."

It is curious to see how the same object is sometimes attained by the most opposite means; take, for instance, the operation of selection. The grower will carefully inspect the growing crop, and when he sees a plant which shows some variation, especially if the variation be of a favourable nature, he marks that plant, isolates it, and, where requisite, protects it from impregnation by foreign pollen. At the same time that he selects those plants which are desirable, he is equally careful to eliminate those which are not up to his standard, or which present characters that are not desirable. The raising of a stock is thus brought about by rigid selection, and by equally careful elimination, two opposite processes, but both conducive to the same result.

So also when it is requisite to obtain flowers out of season, two methods are employed; one by forcing the plant, the other by retarding it.

Every gardener knows the difficulties attendant upon forcing. Experience alone will teach him when to start his forcing-houses, and what temperature to employ. Undue haste and too high a temperature almost always result in failure. If the flower-buds are formed and partially developed, as in a Rhododendron let us say, then the forcing is comparatively easy, growth has already made some progress, and a little stimulant is all that is required to hasten the development. But if the buds are only in

the initial stage, as in the Vine, then growth has to go on under abnormal conditions, and the greatest care is necessary to adjust the temperature and the moisture to the requirements of the growing plant. If all goes well, the flowers or the fruit are produced at the season when it is desired that they should be developed—a season very different from the natural period.

The same result may be obtained not by forcing, but retarding growth. It is now the custom to obtain an abundant crop of flowers of Lily of the Valley, and other spring-flowering plants, during the summer and autumn months.

In these cases the "crowns" are well developed, and the flowers formed before they are put in the refrigerating chamber. Here they remain dormant till they are wanted, when they are removed.

Owing to the courtesy of Mr. THOMAS ROCHFORD, who has constructed large chambers for retarding plants, we are enabled to give some details of the system, which, a few days ago, we saw in operation at the Turnford Hall Nurseries.

Mr. ROCHFORD first commenced independent trials in connection with the retarding of Lilies by means of cold air, some five or six years ago, and used a small, non-conductive chamber fed with cold air from an oil engine. The results obtained from this small beginning must have been very satisfactory, for they were sufficiently convincing to lead Mr. ROCHFORD to sink a large amount of capital in the erection last year of the immense chambers now in use, and of a large engine and boilers. There is so much forcing of Lilies carried out annually at the Turnford Hall Nurseries, that Mr. ROCHFORD had not to rely upon the experience of others, even of those who may have bought retarded crowns from himself. Under his directions, the crowns were purchased from the continent, placed in the conditions afforded by the small cold chamber, removed from the chamber into a temperature in which they could develop flowers, and were eventually sold by him in the market. And the experience that has been already obtained from the new and larger chambers is as satisfactory as it could be expected, after proceeding upon so thoroughly careful lines as did Mr. ROCHFORD. All these details in experience that have been gained are useful to prove the safety of the system, and the certainty with which good results may be looked for from its practice.

Before inspecting the chambers themselves, we were shown the two large marine tubular boilers by which the engine is worked, and the engine itself, which is one by Messrs. HASLAM & Co., Derby. The production of cold air is done by applying a well-known scientific principle: that of compression. All that is needed to reduce the air to a state of coldness is to compress it, and the more it is compressed the colder it becomes. Mr. ROCHFORD's plant reduces the air to a temperature of 90° below freezing point, and when it leaves the engine, it has a pressure of 50 lb. to the square inch. This is conducted into the cold chambers, and means are taken to get it to thoroughly circulate through them. If a plug be removed from the conducting-pipe between the engine and the chambers, the compressed air is belched out in vapour just as steam would be. We held our hands over this for a brief moment and it numbed them; but imagine one's self in a temperature of 90° below freezing point!

As we entered one of the four chambers, and one still containing a large number of dormant crowns of Lily of the Valley, bulbs of several species of Lilium, also Seakale, Spireas, plants of Azalea mollis, Lilacs, &c., all of them still in the dormant state that commenced last winter, the hands and feet became cold, and the film of ice that covered the walls, the hardened state of the material packed around the resting-plants, every condition we noticed, reminded us of vegetation out-of-doors



FIG. 98.—*MAGNOLIA MACROPHYLLA*. PETALS CREAMY WHITE. (SEE P. 326.)

during a spell of hard frost. Yet there is a very great difference, and one that may exist for a long time, though eventually, we doubt not, it will be overcome—and it is the difference between light and darkness.

At present "cold" chambers are necessarily dark, because the roof must be made as non-conductive as the walls, or it would be impossible to maintain the degree of cold required when the sun is hot in June. And this darkness is a total absence of light, or as Mr. ROCHFORD'S manager expressed it, "a darkness one can feel." This fact at present prevents the "retarding" system from being applied to plants that hold their leaves through the winter. Total deprivation of light can only be endured for a long season by plants that have no leaves at the time, and by bulbs and tubers. If it were otherwise, then there would most likely be the certainty of a supply of ripe Strawberries on every day in the year, just as Lilies of the Valley may be obtained every morning without a break; and notwithstanding what we have already written, we shall be surprised if means are not found to apply the system in a modified degree to Strawberry plants, if only to retard them fruiting for a fortnight or a month later than the latest varieties out-of-doors.

Having said something of the conditions of the "cold" chambers at the present time, and the method by which they are maintained cold, it should be mentioned that they are built entirely above ground, and that the walls are constructed in a manner similar to that adopted in cases of first-class fruit-rooms, in order to render them as non-conductive of heat or cold as possible. They contain a vertical layer of sawdust, and one of still air. In the chambers themselves there is a cubic space of sixty-five thousand feet, and as resting plants may be stacked from floor to ceiling, a very large quantity indeed can be thus housed. Lily crowns are not put into the chambers in baskets as they are received from the Continent, but in flat boxes and other receptacles, so that their heads are exposed, except for the cocoa-nut fibre around them, which barely covers them. If put away stacked in baskets, it would probably be found that the cold air being unable to circulate freely through such a mass, some of them would make attempts to grow, which, though unsuccessful, would lessen their value very considerably. Lily bulbs, Azalea plants and Lilacs are also bedded, so to speak, in cocoa-nut fibre.

In connection with the subsequent cultivation of these "retarded" plants, it is necessary to point out that they require to be afforded very little warmth. After prolonged subjection to so cold a temperature, they appear to be the more easily excited into growth, being actually impatient to commence, and no greater mistake could be made than to put them immediately into a strong heat. A temperature of 45° to 50° is amply sufficient.

It may be interesting to give a few particulars in respect to the time required from the moment the plants are taken from the refrigerator, until they are in full bloom, which we were permitted to extract from a memorandum-book at Mr. ROCHFORD'S nursery. Treated as coolly as possible, Lily of the Valley crowns have bloomed and are thrown to the rubbish-heap in three weeks. *Lilium speciosum* (lancifolium), *L. longiflorum*, and *L. auratum*, require from ten to twelve weeks; *Azalea mollis*, three to four weeks; and various *Spiræas* about five weeks.

Although it has been stated that the temperature of the air as it leaves the engine is about 90° below freezing point, it is severely modified in the chambers, where the degree of cold is nothing approaching to this. The temperature is regulated according to the experience that has been gained, but it may probably be found that there is more to learn in this particular, and continual trials will be made until the exact degree of cold needed by each plant has been determined. Then will be saved any waste of force in the manufacture of more cold than is necessary.

Beyond the plants we have mentioned, no other species have been subjected by Mr. ROCHFORD to this "retarding" process, but it would be easy to name others that would be as amenable to the system as these. It should be remembered, however, that from the commercial point of view, it is not expedient to afford valuable space in these refrigerators to plants that it is known might be successfully retarded thereby, unless there is reason to believe also that it would pay to delay their flowering season.

To the scientist it would be very different. With such means as Mr. Rochford now has, the man of science would be constrained to attempt experiments that would yield very interesting facts, although for the moment the results would be unremunerative. With a very small refrigerator, however, it would be possible to do this to some degree. Commercially, of course, it is not necessary to retard plants for more than one season at most, but it would nevertheless be of interest to learn for how long a time a plant, and different species of plants, may be thus maintained in a state of suspended activity without destroying the tissues. The limit would not be likely to be a wide one. In an instance where several were unintentionally left in the cool-chamber until the second season of growth had commenced, the plants seemed to be unable to bear restraint further, and had pushed forth the commencement of growth even in a frozen atmosphere. But not much importance need be attached to this, because it is a solitary instance, and may have been affected by conditions that were unnoticed.

In the future, then, certain flowering-plants will be obtained in bloom every day in the year, and the continuity of the supply will be maintained by three different methods of cultivation. The Lily of the Valley, which may be taken as typical, blooms naturally in the open air in this country in spring. When these have past, the supply of flowers will be continued by crowns which have been retarded by confinement in a refrigerator from a date not later than the preceding February. Such crowns will yield flowers through the hot summer and autumn months, until the early days of January. After this date retarded crowns will have little value, because others that may be lifted from the garden, and therefore have needed no special treatment, may be forced with as good or better results. The value of the retarding system is that it will provide flowers from a date immediately following the natural blooming of a plant, until such a time as the plants out-of-doors have completed their growth, and become fully mature for forcing. There will be no need to force Lilies when they will yield flowers and no foliage, as crowns will do if forced before Christmas, nor any plant until it is perfectly fit for the purpose. At the same time, it will be expedient, at the commencement of each year, to force properly-matured plants to bloom before their natural time, just as formerly.

MAGNOLIA MACROPHYLLA.—This is the handsomest of the deciduous Magnolias, though it is rarely seen in gardens. Our first recollection of it was as a stately tree in a border side by side with the Tulip-tree, and with other species of the genus. At the base of this line of Magnolias, ran a bed or beds filled with Ranunculaceæ, Cruciferae, and other relatively dwarf plants, for the nursery, unlike such establishments generally, was, at that time, a botanic garden worked in connection with the town museum, and the catalogue was a once valued list the "Hortus Duroverni." The association was not happy, and the casual visitor ignorant of botany, could see only discordance between the tall trees and the relatively little plants at their base. That there could be any relationship between them was not obvious to those who did not see the flowers. The tree is of North American origin, growing from N. Carolina to Florida. Its rather thin leaves are obovate or oblong, and sometimes as much as 20 to 30 inches long, bright green above, silvery-grey beneath. The cup-shaped flowers are 15 to 16 inches across, of an ivory colour, with a purplish

blotch at the base of the petals. SARGENT, in the first volume of his magnificent *Silva*, gives a fine figure of the flower, and states that the tree occurs in sheltered valleys protected from the wind, and on deep soil. It so occurs in isolated groups, never very numerous. It was introduced here so long ago as 1800. Our illustration (fig. 99, p. 325) was taken from a flower exhibited at the Drill Hall on July 3 last by Messrs. JAMES VEITCH & SONS.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on Tuesday, Nov. 6, in the Drill Hall, James St., Westminster. In the afternoon a lecture on "Insecticides, Spraying for Fungi, &c.," will be given by Mr. R. NEWSTEAD, F.E.S.

THE ROYAL BOTANIC SOCIETY.—It has been decided by the Council of the Royal Botanic Society not to proceed with the establishment of the proposed Botanical Institute at Regent's Park until the commencement of the new lease of the gardens in April next. This will in all probability be founded on much the same lines as those already existing in connection with the Botanic Gardens in Dublin, Edinburgh, Oxford, Cambridge, and elsewhere. There is at present at Regent's Park a museum, lecture theatre, and small library and herbarium, which will form an important nucleus for any such undertaking, the need of which is greatly felt by intending emigrants who now obtain their instruction in Germany. Among the London institutions whereat botany is taught are the Royal College of Science, the Pharmaceutical Society, University and King's Colleges, the Royal Veterinary College, the Birkbeck and Polytechnic Institutes, the Hospital Medical Schools [?], and a number of private schools, but to none of these are there any gardens attached. It is hoped that the new institute may be affiliated with the London University. *Daily News*.

QUEENSLAND GINGER.—Mr. F. MANSON BAILEY, in the *Queensland Agricultural Journal*, vol. vi., p. 498, June, 1900, figures a new variety of Ginger, under the name of *Zingiber officinale* var. *Cholmondeleyi*. It grows in the Cape York Peninsula, and besides being a good commercial Ginger, is of interest as being the first of the genus met with in Australia. The specimen figured was grown in the Botanic Garden at Brisbane, by Mr. P. MACMAHON.

VEGETABLE PATHOLOGY.—In summing up the requirements for future advance in knowledge, Mr. B. T. GALLOWAY says, "Plant-breeding will enable us to attain ideal forms. Selection will make it possible to fix these forms within certain limits. Nutrition goes hand in hand with breeding and selection. Chemistry and physics play important parts, and in the study of pathological phenomena themselves other branches of science will be brought to bear. Thus the highest aim of the investigator in the field of vegetable pathology will be not to deal with effects only, but to study causes, for it is only by such means that the greatest good can be accomplished."

NOVA SCOTIA FRUIT-GROWERS.—We have received the Annual Report of the Fruit Growers' Association of Nova Scotia, detailing the results of meetings at Wolfville on January 29, 30, and 31, 1900. The President in his address was able to announce that the past year (1899) "had been the most prosperous year in the history of Nova Scotia in the development and profitable production of our varied resources, especially our mines, forests, fisheries, agriculture, and horticulture. . . . We have had fair crops of superior Apples, and obtained the highest price in the history of the trade, owing to scarcity in the year's Apple crop. . . . Our fruit-trees this year have been unusually free from insect pests and fungus diseases, and the dread San José scale is so far not known to exist in Nova Scotia." Other writers also give favourable reports of past crops, and plead for further progress in the future, especially in planting still more and larger tracts with fruit-trees known to succeed,

such 'as Cherries, for instance; and] Cranberries, whose crops would prove additionally valuable when those from other countries fail from disease or other causes. The pamphlet closes with a brief appreciation of the valuable work accomplished by the School of Horticulture here, stated to be the only institution of its kind in Canada—or, indeed, in America.

OPEN SPACES IN THE METROPOLIS.—The Vestry of St. Pancras has purchased two plots of ground opposite Grove Terrace, Highgate, which will as soon as possible be thrown open as a recreation ground. The property was in the possession of the Earl of DARTMOUTH, and the selling price was at the rate of £1,000 per acre. There are other pieces of ground of the same class close by, and an endeavour is being made to acquire these, to the end that they may be enclosed, laid out, and maintained in a similar manner.

DULWICH CHRYSANTHEMUM SOCIETY.—This suburban Society, of which the President is Sir J. BLUNDELL MAPLE, Bart., M.P., will hold its seventh annual exhibition of Chrysanthemums and promenade concert at Dulwich Baths, from 3 P.M. to 10 P.M. on Tuesday and Wednesday, November 13 and 14. A musical entertainment by the "Savoy Concert Party" will accompany the exhibition.

CONCERT AT CHERTSEY.—The Committee and Officers of the Gardeners' Royal Benevolent Institution announce the Second Annual Concert, which is being organised by their local hon. secretary, Mr. A. J. BROWN, in aid of the funds, which will be held on Thursday, November 8, 1900, in the Constitutional Hall, Chertsey. HARRY J. VEITCH, Esq., treasurer of the Institution, will take the Chair. The local hon. secretary of the Gardeners' Royal Benevolent Institution, Mr. A. J. BROWN, Jessamine Cottage, Eastworth, Chertsey, will afford all information in reference to the concert. The following artistes have promised their services at greatly reduced fees: Miss EDITH WELLING, Mme. EDITH HANDS, Mr. ARGYLE GALLOWAY (humorous), Mr. JOHN DOUGAL (tenor), Mr. FRED MONK (conductor), and others. HARRY J. VEITCH, Esq., during the intervals, will explain the work of the Institution.

UN SOUND FRUIT.—It may be remembered that in July of last year there was a seizure of unsound fruit at the establishment of "LIPTON, Limited," in Bermondsey, and the offending salesmen were hauled before the magistrate at the Southwark Police Court. It was contended that the firm sending were not liable to a fine, as they simply bought and ordered delivery per contractor, who took over the fruit at a London railway station. The magistrate held the firm of salesmen responsible for the contractors employed, and inflicted a fine of £149 and £10 10s. costs. Notice of appeal was given, but this appeal was never made. Appeal, however, was made to the Secretary of State, who refused to interfere with the magisterial decision. The condemned Covent Garden firm went into liquidation, and finally on Saturday last application was made by the Bermondsey Vestry Clerk to the Southwark magistrate for the issue of a warrant against the selected defendant, by which he would be committed to prison for the non-payment of the above-noted penalty. Ultimately it was agreed that, so long as the payment of £3 per week was made by the defendant, the warrant should not issue.

FRUIT CROPS IN VICTORIA.—From the most recent vineyard returns we learn that in 1898-9 the growers of Vines numbered 2,453, as against 2,382 in 1899-1900—a reduction of 71. The area of non-bearing vineyards is 2,173 acres in the former period, and 2,424 in the latter—an increase of 251 acres. The bearing acreage was 25,395 acres in 1898-9, and 25,125 in 1900—a decrease of 270 acres. It is reported that a large portion of the Grape crop of 1899-1900 was destroyed by pests, the pro-

duce of over 1,000 acres of Vines being an entire failure from this cause. Of the Grapes harvested this year, 298,920 cwt., the estimated quantity used for making wine was 143,580 cwt., for making raisins and currants 63,490 cwt., and for both consumption or export some 91,850 cwt. In addition to the 1,998,882 lb. of Raisins, the produce of the last harvest, 585,460 lb. were made on the New South Wales side of the Murray river from Grapes grown in Mildura, as against 427,840 lb. in 1898-9. Particulars are also to hand respecting other fruit products during the past two harvests. Apples, Pears, Quinces, Plums, Peaches, Oranges, &c., produced together in 1898-9 a total of 516,000 cwt., as against 536,000 the last harvest—an increase of 20,000 cwt. Of small fruits, such as Raspberries, Strawberries, Gooseberries, Olives, &c., the produce in the first period was 20,000 cwt., last harvest 26,000 cwt.—an increase of 6,000 cwt. Colonial cultivators might study market conditions here, as affected by the failures in Greece.

"THE ATTACHÉ AT PEKIN."—Messrs. MACMILAN & Co. have re-published Mr. FREEMAN MITFORD's letters from China under the above title. Though written many years since, yet so slow are the changes in Pekin, that its re-publication at the present time is peculiarly appropriate. Mr. MITFORD's style is, moreover, so graphic and so agreeable that the reader who dips into the volume will find it hard to desist till he has completed it. Those who wish for a concise history of China, in so far as it bears upon the existing state of affairs, should peruse the Preface and study the Appendix, entitled "How Mandarins are Made." A map and a good index are material aids to the reader.

CANADIAN FRUIT EXPORT.—We learn from the *Canadian Horticulturist* for October that a cold storage car for use on the Grand Trunk Railway, and special cold storage compartments of the same kind on board the steamers, have been prepared in place of the unsatisfactory appliances hitherto in use. Manchester will be the port to which the first shipments will be made, and should the results prove equal to expectations, other lines will be fitted up.

THE OSAGE APPLE.—In *Meehans' Monthly* for October is a short article on the edibleness of the Osage Apple, in which we read that, "When the writer of this was a student at Kew over fifty years ago, a small barrel of Osage Apples was received, the writer assisting to open the barrel; the fragrance was delightful. At that time, Sir WILLIAM HOOKER and the young Queen VICTORIA were passing, and were attracted by the sweet odour. Sir WILLIAM, in his usual pleasant manner, explained what he knew about them—that they were closely related to Mulberry, and were good to eat, as the Indians ate them. The Queen slightly bit one, and then, with a suspicious smile, remarked 'Sir WILLIAM!' In a good-humoured way he responded that he had been credibly informed that the American-Indians ate them, but he supposed some method of cooking must have been employed. But ever since this hint, in the long-ago times, the writer has found no confirmatory proof of this."

CANADIAN STANDARD APPLE BARREL.—The barrel sanctioned last year contained 103 quarts imperial measure, or 107 quarts. The new standard barrel asked for by the Ontario Fruit Association holds 96·51 imperial quarts dry measure. The staves are 1½ inch shorter, which is the principal difference.

PARIS EXHIBITION.—The Administrating Council decided to divide the last temporary Horticultural Congress, which was to have taken place on October 31, into two parts. The special Chrysanthemum Show was held on this date; it could not be advanced without inconvenience. For the other flowers, foliage plants, fruits, vegetables, &c., the Congress was held on October 24,

and duly reported in these columns. The *Salle des Fêtes* is still reserved for the exhibits of fruit. As regards the new varieties of *Begonia erecta cristata*, mentioned in the notice of the last Congress (p. 292), it may be added that the firm VILMORIN, ANDRIEUX & Co., of Paris, showed some identical varieties. At the meeting of the Société Nationale d'Horticulture de France, on October 11, the last named exhibitors, and also MM. VALLERAND FRÈRES, exhibited various flowers of *Begonias* deformed and altered as described before, and under the name of *Begonia monstrosa*, and *B. phénomène*. It seems that the difficult question of priority need not be entered upon, as these flowers probably represent transitional forms closely allied to more distinctive varieties. All these forms came from seed obtained by MM. VALLERAND, and sold by them to an amateur grower. When the plants had flowered, this amateur sent the specimens back to MM. VALLERAND and MM. VILMORIN ANDRIEUX. Such, at least, is affirmed on good authority.

THE NEW BOTANIC GARDEN AT DAHLEM, BERLIN.—In the *Gartenflora* of October 15, Dr. L. WITTMACK gives a description of the new botanic garden at Dahlem, and records the progress made in laying out the ground under the superintendence of Professor ENGLER, Messrs. PERRING, PETERS, Dr. GRAEBNER, and others. Several of the greenhouses, propagating-houses, and conservatories, are now completed, and the arboretum and other portions of the garden have been successfully planted. One of the most interesting of the departments is that devoted to the illustration of botanical geography. The visitor is supposed first to enter a valley with its meadows, woodland, Oak, Beech, and other forests, each with its characteristic undergrowth, and to pass over meadows, moors, heaths, and downs, in his progress to higher regions. Among the mountains are included the floras of those of the temperate and northern hemisphere, from the Pyrenees through the various districts of the Alps, Carpathians, Balkans, Taunus, and Caucasus, to the Himalayas, and on to Japan, concluding with the Rockies and the mountains of the coast of West America. No pains have been spared to collect as many different examples of the flora of these regions as possible, and they represent numerous journeys taken by Dr. ENGLER himself for the purpose of obtaining specimens which is to be hoped will flourish in their new abode. The picturesque element has not been neglected among so much that is practical, and Berlin is to be congratulated on the possession of a botanic garden that is unique in Germany.

"WEST INDIAN BULLETIN."—The fourth number of the first volume of the *West Indian Bulletin* includes papers on: Moth Borer in Sugar Cane, by H. MAXWELL LEFROY; Sugar Cane Experiments at Barbados, by Prof. J. P. D'ALBUQUERQUE, and J. R. BOVELL; Experiences with Seedling Canes in British Guiana, by F. J. SGARD; Sugar Cane Experiments in Louisiana; Fixation of Atmospheric Nitrogen by Leguminous Plants; Tree Planting in Antigua, and Care of Pastures in Antigua, by the Hon. FRANCIS WATTS; Cacao Industry in Grenada; Fungi on the Cacao Tree, by J. H. HART; Agricultural Education in English and in French Rural Schools; and Fumigation of Seeds and Plants. The article mentioned above on the Cacao disease is accompanied with an illustrative plate.

CONIFERS AS RAIN GAUGES.—According to a recent number of the *Revue Horticole*, M. FÉLIX SAHUT has lately communicated to the Congrès des Sociétés Savantes observations respecting certain plants that act as registering rain-gauges. "Mention has already been made of the influence of certain more or less severe droughts in the French Mediterranean upon *Pinus Laricio* of Corsica, and *Cephalonian Fir*. The lengthening of the branches of these two species is always proportionate to the quantity of rain falling during those months of the year when it is most profitable to them. Coefficients have been established indicating what the

degree is for each month of the year. These coefficients enable the relationship that exists between the amount of rain fallen, and the greater or less intensity of the vegetation which it has encouraged to be determined. It is shown that, under these conditions, it is possible to judge approximately the quantity of rain which has fallen by measuring exactly the length of the leader, or of the branch produced yearly on these species of Pine, and if the estimate is not absolutely proportionate to the quantity of rain registered by the rain-gauge, it closely approaches to it; and a still closer estimation may be made by taking into account the relative value of the results produced by rain in the several months of the year. It is, therefore, possible, to a certain extent, to use plants specially selected for this purpose as actual registering rain-gauges." *Revue Horticole*.

ROYAL GARDENERS' ORPHAN FUND.—It will be gratifying to the many personal friends of the late Mr. JAMES MARTIN, so long the respected manager of Messrs. SUTTON & SONS' nursery at Reading, to know that as a result of the appeal made by the Executive of the Reading and District Gardeners' Mutual Improvement Association for subscriptions towards a "JAMES MARTIN Memorial," the sum of £135 has been raised and handed over to the Royal Gardeners' Orphan Fund, the Committee of which Institution acknowledge its receipt with thanks, and will apply the sum placed at their disposal strictly in accordance with the object for which the memorial was raised. At a meeting of the Committee held on the 26th ult., it was arranged for an election of candidates to take place at the annual meeting on February 15 next, and nominations for the same will be received by the Secretary up to December 21.

HORTICULTURAL CLUB.—The usual monthly dinner and conversazione will take place on Tuesday, November 6, at 6 P.M. The subject for discussion will be "Egyptian Vegetation," to be opened by Mr. HARRY VEITCH.

FIRE AT MESSRS. MICHAEL RAINS AND CO.—Shortly after six o'clock on Wednesday night a fire occurred, from an unknown cause, on the third floor of a warehouse situated at the corner of Little Somerset Street, Mansell Street, E., belonging to Messrs. MICHAEL RAINS & CO., Bulb Merchants, and used by them as a stores. When the outbreak occurred, work had just been completed for the day, and the warehouse was being locked up. The fire brigade were soon upon the scene, but in the few minutes that elapsed before their arrival, the whole of the upper portion of the building had become well alight. The three upper floors of the building were gutted, and the lower portion was badly damaged by heat, smoke, and water. The loss is covered by insurance.

C. IVY.—Among the many badges and emblems that were sold in the streets of London during the procession of the City Imperial Volunteers on Monday last, were numbers of Ivy-leaves with the letter "C" stamped in red upon them. They sold for one penny, and must have yielded a good profit to the ingenious salesman.

THE WEATHER IN WEST HERTS.

A WELCOME change to warm and wet weather. I say a "welcome" change, because the best time of the year has now arrived for transplanting fruit-trees, Roses, &c., and the ground has lately been so exceptionally dry. Warm weather was also required to allow of the Dahlias, Roses, &c., which have been blooming with unusual freedom this autumn, to remain still in flower. The days were as a rule of only about average warmth, but several of the nights proved singularly warm, while on no night did the thermometer on the grass fall quite so low as the freezing-point. Both at 1 foot and 2 feet deep the soil is now about 1° warmer than is seasonable. Some rain fell on each day of the

week, and the total measurement amounted to about 1½ inch, equivalent to a watering of 5½ gallons on each square yard of surface in my garden. To show how dry closely-cropped ground had become, it may be stated that although about half of the above quantity of rain has already come through the bare soil percolation gauge, not a drop has as yet passed through that covered with short grass. There was but little sunshine—in fact, on three consecutive days no sunshine at all was recorded. In the early part of the week, and for some days previously, the atmosphere had been very calm, but during the early morning of the 27th, the wind was blowing at the mean rate of 22 miles an hour, direction west. *E. M., Berkhamsted, October 30, 1900.*

CHRYSANTHEMUMS.

IN cases where it is intended to exhibit cut blooms, considerable efforts are required to obtain them in the best condition at a particular date. If it is necessary to carry a tall plant with partially-developed flowers into a structure where the temperature is modified, the best

Maintain a buoyant atmosphere in the structures so that moisture may not condense on the cold surface of the petals. A little air should be admitted at night at the top of the house, but care should be taken that the ventilators are not open in such a manner that rain can beat through on to the plants. Drip from faulty glazing must also be guarded against. If the hot-water pipes be kept slightly warm it will help to prevent damping of the florets, as well as assist the developing of the plants.

Bush-grown plants, grown often in very small pots, require much more feeding with stimulants than they are usually afforded; the consequence is a loss of the lower leaves, which renders them unsightly as conservatory plants. Keep a sharp look-out for earwigs, which play sad havoc with the tender succulent florets. *E. Molyneux.*

CHRYSANTHEMUMS AT DOVER HOUSE GARDENS, ROEHAMPTON.

Amongst the many shows of these autumn flowers now to be seen in private gardens, the very fine one Mr. McLeod, gr. to J. P. Morgan, Esq.,



FIG. 100—ALSOPHILA LOBETIANA (HORT. LINDEN). (SEE P. 321.)

way to do this is as follows:—One person should take the pot, and a second manage the branches and flowers, which are carried in a horizontal position. If the blooms hang down and are held securely, the gentle swinging does not harm them in the least. Plants thought to be a little backward should be placed in the warmest part of the house, and the roots may be afforded a weak solution of nitrate-of-soda. Blooms will maintain their freshness and colour for a long time provided they are removed to a cool and shady house, but they must be placed there just previous to the final development of the florets, and the soil, too, should be kept rather drier.

A sudden burst of sunshine upon the plants in an unshaded structure may spoil many blossoms. Chrysanthemums cultivated under the present system are not able to withstand much direct sunlight. Temporary shading, such as that provided by roller-blinds, is necessary. If the plants are in vineries or Peach-houses, and some are partially shaded by the foliage of the fruit trees, the blossoms not so shaded may be protected with thin tissue-paper. The more heat the plants are subjected to during the time the flowers are expanding, the less intense the colours will be.

has at Dover House, Roehampton, is entitled to high place. There may be seen in all some 1,500 well-grown clean plants, of which about 500 are naturally grown, and in medium bush form, to give flowers for conservatory decoration up to after Christmas, and to supply cut bloom in ample quantity. The rest are of the usual disbudded and large-flowered sections, Japanese and incurved; the former, however, largely predominating. A somewhat unusual feature of these plants is that whilst about one-half of them are in two houses disposed in mixed fashion, the others are arranged in two other houses in masses of distinct colours. I think most persons on seeing the plants would prefer the colour blocking arrangement, as I did, for there can be no doubt but that large masses of white, yellow, pink, bronze, reds, and crimsons, are far more attractive than are mixed arrangements. The method also so readily enables anyone interested in the varieties to pick out from each clump or colour those varieties best liked, or which seem to be the finest. I did not observe that novelties were here in force. Mr. McLeod does not pose as an enthusiastic competitor, who must have everything new, no matter at what cost. Some people rush in readily where wise men fear to tread,

and not infrequently pay dearly for novelties that are, after all, much inferior to older varieties. But at Dover House the primary object is to grow fine blooms, that they may be available on long stems for house decoration daily. If but a score of such flowers be cut daily, a big sweep is made in a week, and a large number of plants is needed, not only to enable cuttings of this kind to take place, but also to keep the houses gay as at the first.

In the respective houses were fine blooms of Henry Weeks, Surprise, Madame Rosette, Pride of Madford, Madame G. Bruant, Mrs. White Pop-ham, President Borel, Mrs. Mease, John Powell, Australie, Charles Davis, Madame G. Henry, Madame Phillipe Revoire, Souvenir d'un Ami (very fine), Lady Crawshaw, Mons. Chenon de Leché, Mabel Kerslake, Mrs. Barclay, Lionel Humphreys, Mrs. Coombes, Soleil de Octobre (a superb yellow), Sunflower (rich in hue, and fine), Phœbus, G. W. Palmer, Lady Ridgway, Oceana, Lady Hanham, Sam Probyn, Vivian Morel, Le Grand Dragon, N.C.S. Jubilee, Duchess of Fife, Baron Hirsch, and many others.



FIG. 101.—FOREIGN LEECHES.

If growers generally have their flowers as forward as they are at Dover House, then blooms should be superbly developed by November 6, on which date most of the great shows begin. There is no complaint of rust or of damping in this collection, and most certainly there has been no forcing. The situation of the gardens is an elevated one, and on a deep gravelly base, whilst it is surrounded by open country. These things, allied to first-class culture, help much to create this very fine show. A. D.

DISPLAYS AT LIVERPOOL.

There are excellent exhibitions of Chrysanthemums in the Sefton Park, and at the Botanic Gardens, at Liverpool. At the former place, Mr. H. Herbert has a display consisting of 500 large plants, the majority of which are just approaching their best stage. The display at the Botanic Gardens is made in a house specially constructed for them, and in the central part of this house there are 800 specimens now arranged. Including bush-grown plants, and others of varieties chiefly used for decoration, Mr. Guttridge, the curator, has a collection of 1,500 plants. The excellence of the blooms now rapidly reaching full development has never been surpassed in Liverpool. The varieties

include many of the newer ones, and of these several have succeeded admirably, such are Madame E. Roger, Le Grand Dragon, Jane Molyneux, R. Hooper Pearson, Nelly Pockett, M. Chenon de Leché, Mr. T. Carrington, M. Louis Remy, Madame Gabrielle Debré, &c.

FOREIGN LEECHES AT PENSURST.

SINCE our report on this interesting creature appeared on August 11, Mr. Ringham, Redleaf Gardens, Penshurst, has secured four other specimens, from one of which the accompanying drawing has been prepared (fig. 101). Though the specimen was several inches long, the posterior extremity seemed to be imperfect, and was usually kept concealed by the animal when it was in motion. It seems evident that the leech breeds in the Redleaf Gardens, from the facts stated in the accompanying letter:—

"Enclosed you will find another of those leeches, which was found this morning crawling across the

from the wind as taller ones. The first-named variety is a really good Pea of fine flavour, and I would advise all who have not tried it to include it in their seed order next year. St. Dathus is equally good, a great many of the pods come in pairs, and are well filled. The rows of Peas have been well watered since they first began to run up the sticks. J. Mayne, Bicton, Devon.

GLADIOLUS.—The name of the fine scarlet Gladiolus with white lines mentioned on p. 293 of your recent issue as unnamed is princeps. Although sent out by Herr Max Leichtlin, it was not raised by him, but by some other German raiser, from whom he bought the stock. He considers it to be the first of a new race. It is, as you say, very beautiful, and it bloomed well with me this summer, and was much admired. W. E. G., Queenstown, Ireland.

RUDBECKIA FULGIDA.—All gardeners know *Rudbeckia speciosa* as one of the best of hardy autumn plants. Nursery catalogues persist in calling it *R. Newmani*, spelling the specific name in various ways, but the two names are generally believed to refer to the same plant. *Index Kewensis*, however, makes *R. Newmani* (Loudon) and *R. speciosa* (Wenderoth) both of them good species, printing them in upright type; though the name *Newmani* is entirely ignored by Asa Gray and by the *Kew Hand-list*. From time to time during the last thirty years *R. fulgida* has been offered in nursery catalogues, but has soon disappeared again. I have bought it more than once, but it has rapidly died out in my garden, and as I have lately been asked about the reality of the species, I should like to know whether anyone has cultivated it successfully for long. Asa Gray, in his *Flora of North America*, vol. ii., p. 260, tells us that *R. fulgida* (Aiton) is a true species, and refers, amongst other illustrations, to *Botanical Magazine*, vol. 45, tab. 1996. On referring to this, I find what I should take for a very poor specimen of *R. speciosa*. It might pass for that plant, which Asa Gray tells us was "long cultivated in gardens as *R. fulgida*;" but my experience of *R. fulgida*, which I have had true and recently imported from North America, is that it is just like a shabby form of *R. speciosa*. As Gray assigns its district to Virginia and southwards "in dry soils," whilst *R. speciosa* affects "moist ground," and extends northwards to Michigan. This latter is certainly very impatient of drought, and no plant benefits more by a rich dressing an inch or two thick in the heat of summer. But *R. fulgida* was never contented with anything I could do for it, and I cannot think why anyone can want it who can grow *R. speciosa*. C. Wolley Dod, Edge Hall, Malpas.

SALVIA AZUREA GRANDIFLORA.—I was pleased to read on p. 310 the remarks on the blue *Salvia Pitcheri*, or *S. azurea grandiflora*, at Kew. We grow a good number of them here, and perhaps a few words upon the culture we give them may be useful, although it does not greatly differ from that afforded to *S. splendens grandiflora*, *S. Bethellii*, and *S. rutilans*. We used formerly to plant these out towards the end of May, but found that in lifting and potting them, a great many shoots got snapped off on account of the wood being so brittle. For the past four years we have grown them in pots. We do not obtain quite such large plants, but consider they produce a larger amount of bloom at one time than do plants recently potted up. *S. Pitcheri* and *S. Bethellii*, unlike *S. splendens* and *S. rutilans*, afford one crop of flowers only, and do not continue to throw out side-shoots, which bloom throughout the winter and spring, but they are welcome in October and November by reason of their colour. When *S. Pitcheri* has passed out of flower, we cut the plants back to within a foot of the pot, and store them away under a stage where frost cannot reach them. Very little or no water is afforded them, as this species has tubers similar to a *Dahlia*. Early in February the plants are removed to a light position, and encouraged to make growth. Cuttings are taken when these growths have become 4 inches long, and they are inserted in 3-inch pots, and plunged under a frame placed on a hotbed, where about 90 per cent. of them make roots. They dislike too much top-heat, such as they would be subjected to in a propagating pit; they are removed to larger pots when needful. The shoots of *S. Pitcheri* should not be pinched more than twice, or the racemes of flower will be very short, as they

brick path between the same house in which the other was found and an adjoining range. One was also found about a fortnight ago, but during the night disappeared, and on Sunday a very small specimen was noticed on a pot under the same stage that the first came from. We were much interested in your article on the leech in the *Gardeners' Chronicle*, from which it appears that this variety is comparatively unknown in England. I hope this specimen will reach you alive; you may perhaps then be able to give further details concerning the creature. Geo. Ringham."

HOME CORRESPONDENCE.

LATE PEAS In spite of the continued drought that we have suffered from since the end of August (only 1.66 in. of rain has fallen since then), the late crops of Peas have done capitally, notably Autocrat, sown June 19, which is still giving us many dishes, and the same might be said of St. Duthus, sown July 9. I also put in a row of Late Queen, but this I fear was a fortnight late for the variety. It has plenty of pods, but they fail to fill satisfactorily. All of these varieties are less than 5 feet in height, and as such they do not suffer so much

require a long season of growth. We have plants in 7-inch pots carrying from twelve to fifteen racemes; others in 5-inch pots with half that number. Green-fly should be kept under by dusting the foliage with tobacco-powder, or by vaporising. *S. Pitcheri* is perfectly hardy in Devon. With this note are enclosed two racemes from outdoors, as well as some from under glass. *J. Mayne, Bickton Gardens.* [Both of the examples are good, robust racemes. ED.]

GRAPE DIAMOND JUBILEE.—I was greatly surprised when I read "A. D.'s" note on p. 210 concerning this new Grape, and it will be news indeed to the majority of Grape cultivators in Scotland to be told it is [nothing else than "Black Morocco." This is a serious blow to us all. After being told by all our expert Grape-growers that this Diamond Jubilee was the grandest Grape that had ever been sent out this century, "A. D." says the Fruit Committee of the R.H.S. say this Grape is synonymous with Black Morocco. The seventeen members that gave that decision will, as a matter of course, be expert cultivators of the Grape-vine. "A. D." kindly informs us that the Committee arrived at this conclusion simply by the appearance of the bunches. I presume that when Diamond Jubilee was submitted to them for certificate, it would be accompanied by its own wood and foliage, and all particulars relating to its origin. I would very much like to know if the Committee examined the foliage and wood, or if they read any correspondence relating to how it originated, before they ventured to give such a direct slap in the face to those other Societies and judges of high repute, who have awarded Diamond Jubilee First-class Certificates. That the Diamond Jubilee is totally distinct from Black Morocco will, I am certain, be abundantly proved. The foliage and the peculiar colour of its wood when growing are quite distinct, and so is the fruit from any samples of Black Morocco that I have seen; but perhaps I have not seen Morocco true. I saw at Kippen the graft that produced the Grapes that were sent up to the Royal Horticultural Society for certificate. It was grafted on Black Hamburgh. The stock was carrying over twenty bunches of average size, and the graft had eight or nine bunches that were perfect in colour, and carrying a splendid bloom. That proved to me, and others who saw them, that the Vine was a good bearer; and had the Vine been grown under less trying conditions, the new Grape would have been seen to better advantage. "A. D.'s" suggestion that all new Grapes should be tried at Chiswick before receiving the hall-mark of distinctiveness will, I am afraid, meet with little favour. The Royal Horticultural Society has not always been very happy in its decisions and awards. *David Airdrie, The Gardens, Larbert House, Stirlingshire.*

KNIPHOFIA CAUSING IRRITATION OF THE SKIN.—With regard to the editorial enquiry concerning irritation of the skin caused by Kniphofia, I beg to state that just a fortnight ago I was engaged in parting some large plants by pulling them to pieces with my hands, and was surprised to find that my fingers were covered by a number of small pimples, with a very irritating and burning sensation, similar to the effects caused by *Primula obconica*, and even to-day can still feel it, though, of course, in a much slighter degree. I was at the time quite at a loss to account for it, as a man working with me at the same thing was not affected in the least; so, probably like *Primula obconica*, it would not affect all alike. Even now I will not venture to assert by what part of the plant the irritation was caused, because, although I handled the roots a great deal, there were several flower-spikes on the plants. It would be interesting to know whether any of your readers have had the same experience. *Thos. Blackmore, Great Marlow.*

CITRUS TRIFOLIATA FRUITING.—A specimen of the above many-synonymed subject, referred to on p. 293, is bearing several fruits in a sheltered garden in the south-west. This may not be a very unusual occurrence, though I have only met with one fruiting example previously, in which case the two fruits borne were small and shrivelled; whereas in the instance I now allude to the ten fruits are well developed and plump. The shrub, which is growing in front of an Orchid-house, is about 7 feet in height, and bushy, and in the spring provides a fine display of white blossoms about 2 inches in diameter, while in its warm southern exposure it is almost evergreen. In the winter, when plants of

Citrus trifoliata are leafless, they, at first sight, bear a certain resemblance to *Colletia spinosa*, by reason of their long spines, which, however, differ from those of the *Colletia* in not being branched. For forming an impenetrable hedge, *Citrus trifoliata* and the *Colletias*, *C. spinosa* and *C. cruciata*, would prove invaluable subjects, but in this country their culture is too limited for their being put to such an use. *S. W. F., Kingswear.* [*C. trifoliata* fruited in Canon Ellacombe's garden in 1893 (see fig. 102 in *Gardeners' Chronicle*, November 18, 1893). ED.]

ROYAL SOVEREIGN STRAWBERRY.—I enclose a few trusses of fruit of Royal Sovereign Strawberry. They have been cut from a plantation formed in the middle of July, from plants which had been forced. We have been gathering fruit from this plantation since the middle of September. I have seen several plantations of the variety *St. Joseph*, but the fruits have not been comparable to ours. I have also a very heavy crop of fruit on *Vicomtesse*, but they are not nearly so large. *James Fulton, Grim's Dyke, Harrow Weald.* [The trusses were very fine indeed, and bore numerous fruits, but these were unripe. Had the plants reached this stage a month earlier, we should think they would have been more useful. ED.]

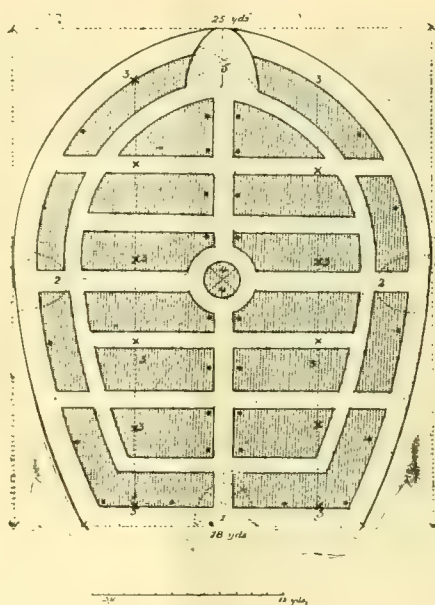


FIG. 102.—SUGGESTED DESIGN FOR A ROSE GARDEN.
(See *Gard. Chron.*, October 20, 1900, p. 237.)

- 1.—Entrance, double arch, 9 ft.
 - 2.—Single arches, 9 ft.
 - 3.—Pillars, 10 ft., carrying festoon Roses, 15 ft. apart.
 - 4.—Central double arch, 9 ft. or 10 ft. high.
 - 5.—Triple arch, or to form arbour for Climbers, 10 ft. high; Standard Roses, 4 ft. high.
- Shaded parts, beds for Dwarf Roses, &c.

NOTICES OF BOOKS.

PLATES OF GARDEN FLOWERS: "Die Schönsten Stauden für die Schnittblumen und Garten Kultur." The most beautiful plants for furnishing cut flowers and cultivation in Gardens.

THIS is a collection of coloured plates executed by Mr. Walter Müller, and representing desirable plants for general cultivation. The text is supplied by Herr Max Hesdörffer, the Editor of the *Gartenwelt*. The plates are well executed, and appeal to those to whom the German text is of no avail. Among the plants figured in the numbers before us are *Centaurea ruthenica*, *C. dealbata*, *Heuchera sanguinea*, *rosea*, *rubescens*, and *alba*; *Doronicum caucasicum*, and *D. magnificum*; *Helenium Hooperi*, *Helianthus giganteus*, *Senecio pulcher*, *Astilbe Lemoinei*, *Aruncus silvestris*, various perennial *Asters*, *Wahlenbergia grandiflora*, *Gaillardia hybrida*, *Anemone silvestris* var. *Delphinium sinense*. The plates are not numbered, and some-

times two species are figured on the same sheet, which is inconvenient. The work is published by Gustav Schmidt, of Berlin, and may be commended to those who collect illustrations of plants.

OUR FORESTS AND WOODLANDS. By John Nisbet. (J. M. Dent & Co.)

THIS is one of the Haddon Hall series, edited by the Marquess of Granby and Mr. G. B. Dewar, but written by Mr. John Nisbet, already favourably known by his writings on forestry. The book is pleasantly written, and contains much information which will attract and interest the country gentleman. The earlier chapters are devoted to forestry in the olden times and the iniquitous forest-laws, the rigour of many of which was swept away by the *Charta de Foresta*, passed in 1225. The progress of deforestation and the negligent management of woods up to the present time, are treated of. At present, according to Mr. Nisbet, we have about three millions of acres of woodland, an amount so inadequate to our requirements, that we have to import timber to the value of over twenty-five million pounds sterling every year, the greater part of which might be grown in our own country. Chapters on the Oak, Beech, Ash, Elm, on the soft woods, Alder, Birch, Willows, &c., follow, and these are succeeded by chapters on Conifers, including the Douglas Fir, whose average annual production of wood exceeds that of any other Conifer grown in Britain. Eight acres on Lord Mansfield's estate at Scone, in Perthshire, now support 1,535 trees, averaging 75 feet in height, and containing on the average 25 cubic feet each, having a total value of about £194 per acre. The thinnings of 1887 sold for £34, and the only expenditure since then has been £17. Game preservation and rabbit multiplication grievously interfere with anything like successful forestry, though it is possible by management to effect a compromise which shall not entirely negative sport, and yet secure in time a profitable return from the woodlands. The final chapter is devoted to the consideration of the improvements needed in British forestry, foremost among which is the need for a carefully-devised working plan, steadily and continuously acted upon. As it is, when estates change hands by death of the original proprietors or otherwise, the successor often finds himself hampered with estate expenses, and so the plan, if there ever was one, is no longer acted on, or it is modified so that no comparable results can be obtained. Untold waste arises from a want of scientific method, but the proprietor who has only a life interest in his estate can hardly be expected to impoverish himself for the prospective advantage of his successors. These circumstances point to the policy of establishing State forests, especially in Ireland, or at least of encouraging private owners by remission of taxation, as is done in France. "Given these," says our author, "there can be little doubt that the good prospects of the timber market of the near future would soon lead to considerable improvements in British forestry, without appreciably affecting the maintenance of a reasonable head of game of all the better sorts to satisfy the true sporting tastes of that best of men, the English country gentleman."

STUDIES IN FOSSIL BOTANY. By D. H. Scott, Honorary Keeper of the Jodrell Laboratory, Royal Gardens, Kew. (Adam & Chas. Black.)

UNDER this modest title Dr. Scott publishes the substance of certain lectures given by him at University College, London. They are not intended to cover the whole ground of fossil botany, but to point out the links that have been discovered in the genealogical chain which binds together the plants of former eras with those which exist to-day. The construction of a "genealogical tree" is the aspiration of botanists. Each successive discovery furnishes additional data, but at the same time illustrates how visionary and remote is the prospect of presenting a complete pedigree. The student need not be discouraged at this, for though he may

not hope to see the completed structure, the portions he is permitted to see are of the highest interest. Take, for instance, the wonderful discovery made by two Japanese botanists, Messrs. Ikeno and Hirase, of spermatozoids in Ginkgo, a discovery which bridges over the gap between Conifers and vascular Cryptogams. In Cycads, a similar discovery was made by Mr. Webber.

Dr. Scott's chapters are chiefly devoted to the comparative anatomical structure of various groups of fossil-plants, such as the Equisetates, including the Calamites, the Lycopodiates, including Lepidodendron, Sigillaria, and others; the Ferns, Cycadofilices, Cordactes, and other groups. Alluding to the complexity and difficulties presented by the attempts to discern the course of evolution, Dr. Scott illustrates the point by the difficulty which is experienced in tracing the true history of a field crop or a garden plant. This is so, no doubt, in many cases, but it is not universally true. Since attention has been called to the subject, the history of many of our garden flowers has been elucidated, and the history of the new forms that are constantly being evolved is fairly well known. For those who desire to gain a general acquaintance with the anatomy of fossil plants as contrasted with that of their descendants, Dr. Scott's book may be recommended as one of great value; the clear presentation of facts, the profound knowledge exhibited, and the cautious way in which inferences are drawn, render this book peculiarly acceptable at the present time.

SOCIETIES.

PARIS EXHIBITION.

THE horticultural exhibition held on October 24 suffered somewhat from the lateness of the season, and was not well provided with exhibits, if we except the fruit, which again filled the Salle des Fêtes. The vegetables were numerous and good, but among the flowers there were many gaps, and few specially noticeable collections. We noted fine Dahlias from MM. VILMORIN-ANDRIEU, FÉLARD, PAILLET, PIENNES & LARIGALDIE, and NONIN; pretty shrubs from M. MOSER; Strawberries, still fine, from M. MILLET and from M. ROSETTE of CACH; Roses from M. ROTHBERG and MM. LÉVÊQUE ET FILS; Carnas, still beautiful, from MM. BILLIARD, BARRE, PIENNES, and LARIGALDIE; Urostigma sub-triplinevum, a new plant brought from Brazil and La Plata by M. EDOUARD ANDRÉ; fine Fancies from M. BOULANGER; Cycas and Palms from M. MOSER; Carnations from MM. COURBERON, RÉGNIER, and LÉVÊQUE ET FILS; and from M. DES DIGUÈRES fine Begonias.

Orchids were still well represented, and the selections included specially fine varieties of Vanda cœrulea and Cattleya labiata. M. ROBERT LÉBAUDY (gr., M. Page), had a fine group of mixed Orchids with Chrysanthemums, and a splendid lot of Begonia Gloire de Lorraine. M. MAGNE of Boulogne staged a pretty group including various Orchids in season, notably Cattleya labiata and the variety albens. M. DUVAL's set, grown in leaf-mould, and the Orchids sent by MM. CAPPE, BERANEK, and RÉGNIER, were also good. M. DALLÉ sent a few choice Orchids arranged with large foliage plants, a well-flowered Dendrobium Phalenopsis, a fine Eulophiella grandiflora (= Petersiana?), a Cattleya × Hardyana, and other specimens.

In a small group, M. BERT showed a singular plant that cannot yet be commented upon: a Cattleya gigas with a very large and curiously-coloured bloom; and another much smaller flower, as yet not fully open, of quite a different and very pale colouring.

M. MARON of Brunoy staged some splendid seedlings, among them a novelty: Lælio-Cattleya Bowringiana × blesensis, a very small flower, but nicely formed; the well-opened lip white, edged with velvety purplish-red; L. inter-medio flava var. Bijon d'Or is a new, bright yellow variety; the fine L. callistoglossa Chantrieri is very warm in colouring; Cattleya × Maronis had eight flowers on a raceme; and C. × Adonis was staged, also C. × Olivia; and a pretty variety of Lælio-Cattleya Boreli among other Orchids. G. T. G.

NATIONAL CHRYSANTHEMUM.

OCTOBER 29.—A meeting of the Floral Committee of this Society was held at the Royal Aquarium, Westminster, when First-class Certificates or Awards of Merit were awarded to the following varieties:—

C. Calvat, 1899.—A pretty incurved Japanese variety of pale mauve colour, with good petal, pointed at tips. From Mr. W. J. GODFREY, Exmouth Nurseries, Devon (Award of Merit).

C. Mrs. J. B. Bryant.—A large rosy-purple coloured Japanese flower, with silver reverse. Centre full and pretty. From Mr. H. PERKINS, Greenlands Gardens, Henley (First-class Certificate).

C. Miss Evelyn Douglas.—A reflexed Japanese flower of deep mauve colour. From Mr. H. WEEKS, Thrumpton Hall Gardens, Derby (First-class Certificate).

C. Miss Millicent Richardson.—A Japanese flower of amaranth-purple colour, with silver reverse. Blooms very large, but not of much depth. From Mr. RICHARDSON, Ware (Award of Merit).

C. Mrs. Geo. Milham.—A very light purple Japanese incurved flower, with silver reverse; very large, with broad florets.—From Mr. GEO. MILHAM, Emlyn House Gardens, Leatherhead (First-class Certificate).

C. Scottish Chief.—Apparently a very variable flower; colour pale lemon. Two of the blooms shown were of the smooth-petalled Japanese type, but in another the tips of petals were much incurved. From Mr. H. WILKS (First-class Certificate).

MANCHESTER AND NORTH OF ENGLAND ORCHID.

THURSDAY, OCTOBER 25.—Members present: Messrs. G. Shorland Ball, H. Worthington, R. Ashworth, A. Warburton, W. Thompson, J. Robson, W. Stevens, J. Cypher, P. Weathers (Hon. Sec.).

There was a very nice display of plants on this occasion, and several good groups were staged.

J. LEEEMANN, Esq., West Bank House, Heaton Mersey (gr., Mr. Edge), exhibited a choice group, to which a Silver-gilt Medal was awarded. There were many interesting plants, including a notable specimen of Cattleya × Mantini var. nobilior, ablaze with bloom, which received a Cultural Certificate; a pretty form of Cattleya × Hardyana received an Award of Merit, and a like award going to Leemann's variety of Lælio-Cattleya × "Henry Greenwood."

W. THOMPSON, Esq., Walton Grange, Stone (gr., Mr. Stevens), also staged a nice group of plants, for which a Silver Medal was awarded. A finely grown plant of Odontoglossum crispum var. Jubilee was awarded a Cultural Certificate. There were in the collection several fine plants of Epidendrum vitellinum var. autumnalis, which flowering at this season would seem to be a distinct variety, it is not so large as E. vitellinum majus, but is apparently of easier culture.

RICHARD ASHWORTH, Esq., Ashlands, Newchurch (gr., Mr. Pideley), received a First-class Certificate for Odontoglossum crispum var. "Oliver Ashworth," a striking flower of middle size, good shape, and heavily marked with spots of dark reddish-brown.

HARRY WORTHINGTON, Esq., Whalley Range (gr., Mr. Went), received a First-class Certificate for an uncommon form of Cypripedium callosum var. Sanderæ, a variety distinct in flowers and foliage from the ordinary forms, and a strong suggestion of C. Lawrenceanum in the foliage is remarked.

A. WARBURTON, Esq., Vine House, Haslingden (gr., Mr. Lofthouse), received First-class Certificates for Cypripedium × l'Ansoni, a fine Morgania hybrid, and for C. × Olivia, previously shown (and Certificated) by Mr. S. GRATIEX.

T. BAXTER, Esq., Morecambe (gr., Mr. Roberts), exhibited Odontoglossum crispum var. "Ruby" (Award of Merit), and O. nebulosum album, which has previously received a First-class Certificate.

W. DUCKWORTH, Esq., Shawe Hall, Flixton (gr., Mr. Tindall), staged a group of Cattleya labiata and C. aurea principally, making therewith a telling little group, for which a Silver Medal was awarded.

D. O. WRIGLEY, Esq., Bridge Hall, Bury (gr., Mr. Rogers), sent Dendrobium Phalenopsis var. hololeuca, which plant was dealt with at the last meeting, the committee confirming their award of a First-class Certificate.

F. W. TATTERSALL, Esq., Crookleigh, Morecambe (gr., Mr. Grant), staged a small group consisting principally of Cypripediums, for which a Vote of Thanks was given.

MESSRS. J. BACKHOUSE & SON, Ltd., York, received an Award of Merit for Cattleya Goosensiana, a hybrid between C. Schilleriana × C. granulosa. The same firm exhibited Lælio-Cattleya × Antigone (L. purpurata × C. Trianae).

Mr. J. CYPHER, Cheltenham, staged a nice group of plants, containing Cattleyas, Dendrobiums, and Cypripediums principally, and was awarded a Silver Medal. P. W.

MISCELLANEOUS SOCIETIES.

Reading and District Gardeners'.—"Fruit Trees in Pots" was the subject of a paper read by Mr. JAMES HUDSON, V.M.H., of Gunnersbury, before the members of the above Association at their fortnightly meeting on Monday last. The subject was placed before the members in a very clear but comprehensive manner under the following headings:—Construction of houses; forcing and non-forcing; pot culture versus planted-out trees; the longevity of trees in pots; when to purchase; what to purchase; when to pot; potting; soils; pots and sizes; watering; manures; ventilation; temperature; pruning; thinning the crop; gathering; insects; out-door treatment; and varieties.

An exhibit of flowers cut from the open was put up by Mr. WILLIAM TOWNSEND, Sandhurst Lodge Gardens, comprising thirty-eight varieties. Mr. E. S. PIGG, The Gardens, "Samoa," Reading, staged a very nice lot of Ca'dadiums;

whilst Mr. HUDSON showed four varieties of Apples and four varieties of Pears, grown under the treatment he described.

Chislehurst Gardeners' Association.—The tenth session of this Association of Gardeners has commenced. The Association has done much good in past years, and added not a little by means of concerts and exhibitions to the funds of the Royal Gardeners' Orphan Fund. On Tuesday October 23, the members had a lecture from their President, Mr. J. Lyne, gardener of Foxbury, upon the work of the season in kitchen, flower, and fruit-garden. It is a source of gratification to all connected with this body of gardeners to be informed that its finances are in good order, and its power for good unimpaired.

St. John's (Sevenoaks) Gardeners'.—In connection with the above Society, a lecture was delivered in St. John's Hall on Thursday, the 25th ult., by Mr. H. Cannell. Mr. Cannell took for the subject of his lecture, "The Garden and its Worth," and illustrated his remarks by a collection of fruit and vegetables, including Onions (some weighing 3 lb.), Parsnips, Cauliflowers, Cabbages, Beet, Leeks, Carrots, &c. Mr. Cannell is a vegetarian, and pleaded for vegetables to have the first place at a meal, instead of the secondary place, as at present, in most English homes, and gave it as his conviction, grounded on experience, that we should all enjoy better health if we ate more vegetables and fruit instead of meat. To show the value of some kinds of vegetables in winter, Mr. Cannell brought with him a dish of cooked Beans—the variety named The Czar, a white Runner Bean. These are larger than the Haricot, and can be grown by anyone who has a garden, however small. He also brought a dish of cooked Gourd—the "American Squash." Both these dishes were handed round for the audience to taste, and the general opinion was that they were excellent. Mr. Cannell spoke for about an hour and a half, and at the close was accorded a hearty and unanimous vote of thanks.

Beckenham Horticultural.—The room at the Church House was too small to conveniently accommodate the audience and exhibits at the last meeting on Friday evening, October 26. Mr. W. HARRIS read a paper on "Bulbs," particularly Dutch Bulbs, Iris, Ixias, Lilies, and a lively discussion ensued on Lilium Harrisii. The diseases of L. candidum, Spanish Irises, and Montbretias, and various matters connected with bulb culture were discussed.

The exhibits consisted of a fine display of winter-flowering Begonias from Messrs. PEED & SON; two sprays of Phalenopsis Schroderiana distinct, two varieties of Lælia prestantis, with a fine flower-spike of Vanda cœrulea, were shown by Mr. Day, gr. to H. F. SIMONDS, Esq.; and Mr. J. Trowell, gr. to Mrs. LINK, contributed a plant of Oncidium incurvum carrying long sprays of blossoms, and a bowl of Lily of Valley from retarded crowns put in on October 5; the spikes, individual bells, and foliage, were remarkably strong. A vote of thanks was accorded Mr. HARRIS for his paper, also to those who had contributed plants and flowers, and to Mr. E. BURGE, who so ably occupied the chair.

NEW INVENTIONS.

WILLIAMSON'S CHRYSANTHEMUM SUPPORT.

THE invention consists of a small cast-iron bracket (affixed to the show-board by two small wood screws), and a steel wire with a double loop to hold the flower-tube. The wire is adjusted by a small thumb-screw. By means of this support the flowers can easily be adjusted so as to display them to the best advantage. The apparatus, which is very inexpensive, can be had of Mr. W. T. Williamson, 24, Bury Street, Lancashire Hill, Stockport.

Obituary.

JOHN MORLE.—We regret to record the sudden death of Mr. Morle, who for more than twenty years has held the position of foreman for Messrs. Jas. Veitch & Sons, Chelsea, at their Southfields Nursery. Mr. Morle was known to a large number of gardeners, who, in various capacities, have had some connection with these nurseries. Deceased was at his post on Saturday last, and we believe was out-of-doors also on Sunday, but died on the following day, Monday, the immediate cause of death being apoplexy.

ENQUIRY.

Is there any Ornamental Crab that is really transparent?

ANSWERS TO CORRESPONDENTS.

APPLE PEASGOOD'S NONSUCH: *G. Nottage*, Mill House, Bourne End, sends a fine specimen, 5 inches across, and nearly 16 inches in circumference, which weighed 1 lb. 6 oz. We received a fruit of this variety in 1893, the weight of which was 1 lb. 12 oz.

CHRYSANTHEMUM BUDS: *Tyntesfield, W. B.* The condition is not at all uncommon, especially in cases of varieties of the Carnot type. The condition is due to immaturity of the plants. The wood of your plants is not sufficiently "ripened" as the cultivator would describe it, and this may be due to you having used too much stimulant, or you have not sufficiently exposed the plants and shoots to the influence of sunlight and air. "Check" is another cause of the buds developing lateral buds instead of florets. The plants need to be kept growing and maturing steadily, without check, whether it be during their growing stage, or when they are developing blooms.

CUCUMBERS DISEASED: *H.* The Cucumbers on arrival had the tip-end of the almost full-grown fruit shrivelled. On this diseased part, and also downwards on the still firm parts, were numerous soft spots from $\frac{1}{4}$ to $\frac{1}{2}$ inch in diameter, and extending some distance below the skin; these were covered, or soon became covered, with a greenish mould, a species of *Cladosporium* which has been before observed on indoor Cucumbers, attacking them in the same way. The fruits are too large to allow spraying with fungicides. If the air of the houses could be kept drier as the fruits approach maturity, the growth of the fungus would probably be checked.

CYTISUS FRAGRANS (Genista): *W. G. S. G.* In the spring young shoots taken off with a heel, and placed in a close warm frame, or in pots of sandy peat and loam covered with bell glasses, and plunged in a bed of tree leaves or Oak bark, root readily. The average temperature of the bed may be 80°, that of the air 65°. Half-ripened shoots taken in July, with or without a heel, and placed in pots of sandy loam and peat, surfaced with clean silver sand, and covered with bell-glasses, will root in the greenhouse. The cuttings in any case must be shaded from strong sunshine. Time required in the spring three to four weeks, in the summer four to five weeks. These plants can be successfully layered, and a nice little plant obtained in a short space of time.

FINLEY LAWN-RAKE: *Several Enquirers.* The address is, Finley Lawn-Rake Co., Joliet, Ill., U.S.A.

FLORAL CLOCKS: *Miss Davis.* You will find a list in the *Natural History of Plants*, by Kerner & Oliver, vol. ii., p. 212-215.

FRUITS FOR A SOUTH WALL: *Gardener.* In addition to the Peaches and Nectarines, you should plant Brown Turkey and Negro Largo Figs, and Pears Easter Beurré, Knight's Monarch, Van Mon's Léon le Clerc, Duchesse d'Angoulême, Huyshe's Prince of Wales, Huyshe's Prince Consort, and Chaumontelle. These are mid-season or late varieties, for which early varieties might be substituted, so as to have extra early fruits, say, Bon Chrétien, Jargonelle, Citron des Carmes, Clapp's Favourite, Beurré de l'Assomption, and Beurré d'Amanlis. Timely gathering of the fruits of early varieties must receive attention, or the flesh will be mealy.

GARDENERS' OWN POTATO CROP: *Farleigh.* We think you would have been well advised to have lifted the crop, a perquisite, in your own time, and not have disregarded your employer's instructions by employing the garden men. You cannot claim the tubers now that you are dismissed from the situation.

LOTUS SEEDS FROM KASHMIR: *Lotus.* Sow the seeds in loamy soil in pots, and sink the latter in the spring in tubs filled with water, and place them in the greenhouse or intermediate-house. When the seeds have germinated, the pots may be sunk into mounds of loam and manure, placed at the bottom of a shallow pool, lake, or sluggish stream. The roots need not be more than 3 feet below the water level. The seeds should be sown forthwith, and the soil kept uniformly and moderately moist.

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can consistently with our editorial work, but as the naming entails much labour and considerable cost we must request that they will observe the rule that not more than six varieties of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is often unavoidable.

T. F. Yorks. 1, Rondelet; 2, Rousselet de Meestre; 3, Fondante de Malines; 4, not in condition for naming; 5, Gendebien; 6, Warner's King.—*A. F. T.* 1, unknown; 2, Verte Longue; 3, Doyenné d'Alerçon.—*W. H. Y.* 1, Ambrette d'Hiver; 2, Brown Beurré; 3, Van Mons. Léon Leclerc; 4, Bishop's Thumb; 5, Durondeau; 6, Louis Grégoire.—*Edgar.* 1, Beurré Benoit; 2, Bergamotte Thonin; 3, Marie Louise; 4, Hornead Pearmain; 5, Golden Winter Pearmain; 6, Red Ingestre.—*A. B.* 1, rotten; 2, Lawrence; 3, Ribston Pearmain; 4, Harvey's Pippin; 5, Tower of Glamis; 6, Hawthornden.—*Comber.* 1, Peasgood's Nonsuch; 2, Winter Pearmain; 3, Duchess' Favourite; 4, Dr. Harvey.—*A. W.* Scarlet Crofton.—*J. E.* 1, Beauty of Kent; 2, Scarlet Tiffing; 3, not received; 4, Tillington; 5, Nonpareil; 6, Seek-no-farther.—*A. N.* The labels were tied to the stalks of the fruit; they had become moist through the decay of one of the fruits, and being of thin paper, had become separated from the respective fruits, so that it would be very difficult to make the names clear to you without considerable explanation. Pieces of well-gummed paper, duly numbered, stuck to the sides of the fruits, is the simplest and most satisfactory way of distinguishing them.—*Newland.* Your fruits were packed with the greatest care, and consequently arrived in excellent condition, it was a pleasure to deal with them. 1, Reinette Franche; 2, Cox's Pomona; 3, Calville Malingre; 4, Norfolk Bearer; 5, Flanders Pippin; 6, Tower of Glamis.—*Old Subscriber.* 1, Scarlet Pearmain; 5, Hawthornden; 6, Emperor Alexander; 7, Scarlet Nonpareil; 8, Grange. The Pear is Soldat-Laboureur. You have exceeded the number allowed by our rules. The other fruits will be dealt with in another issue.—*H. B.* 1, Calbasse; 2, Ribston Pippin; 3, Allen's Everlasting; 4, Calville Malingre; 5, Augustus Pearmain; 6, Beurré Superfin.—*T. T. Essex.* If all correspondents who submit fruits for name would furnish as full particulars as you have done, our task would be materially lightened. Your Pear is the Black Worcester, one of the Warden type, very interesting, and of early date. The Iron Pear is the Poire de Fer of French pomologists. The fruits are attacked by the Scab Fungus—*Fusicladium dendriticum*—which has been repeatedly described in these pages. Spraying with copper-sulphate is the best remedy, but if the tree is a large one, it will be a difficult task. The Apple is Pitmaston Pineapple.—*W. H. D.* Pears too much decayed to be recognised.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*R. C.* must think an Editor's duty is to name specimens. He sends no fewer than nineteen, mostly leaves without flowers. We name a few, and must request our correspondent not to send more than six on another occasion. 1, *Ricinus communis*, a tender annual, will live if kept under glass for a longer period; 2, *Begonia*; 3, *Lobelia cardinalis*; 4, *Poa trivialis*, hardy in the south; 5, *Delphinium*; 6, *Gazania*, garden variety; 7, *Veronica Andersoni* var.; 8, *Nerium Oleander*, not hardy; 10, *Conoclinium ianthinum*; 12, *Panax Victorie*; 13, *Fittonia argyrea*; 14, *Maranta*; 18, *Acacia*; 19, *Myrtus communis*. Take up your Fuchsias and pot or lay them in by the heels in a cold pit. *Centaurea* may be potted up, and kept in a cold house; almost hardy.—*W. B.* Your specimen has the sessile leaves of *Q. pedunculata*, but the short-stalked acorns are those of *Q. sessiliflora*! It is such specimens as your's which lead botanists to conclude that there is but one species. You do not say what is the habit of your tree. If the branches are ascending, not much contorted, then we should call it *sessiliflora*. If the branches are spreading and contorted, then we should call it *pedunculata*.—*Edgar.* 1, *Helenium autumnale striatum*; 2, We cannot

name the Aster.—*E. C. L.* 12, *Cupressus (Retinospora) pisifera*; 13, Perhaps *Magnolia acuminata*, but we cannot be sure from the leaf only; 16, *Pinus radiata* (syn. *insignis*).—*A. B.* *Dendrobium chrysanthum*. For the Croton-leaves, see "Answers to Correspondents," p. 284.—*H. W.* *Epidendrum cochleatum*.—*Subscriber.* 5, *Carex scaposa*, (*Bot. Mag.*, t. 6950). The localities for this plant are the Lo Fan Shan Mountains, and the "Interior of Amoy," where Swinhoe found it. It belongs to the subgenus *Eucarex*.—*Rus in urbe.* We should call it *Pyrus Aria*, but the species is very variable.—*Armitage & Co.* *Euonymus europæus*.—*H. J. M.* *Ipomopsis elegans*.—*Box labelled "Octopus."* *Viburnum Opulus*.—*F. W.* *Crataegus coccinea*.—*A. G.* 1, *Salix myrtilloides*; 2, *S. purpurea*; 3, not found; 4, *Salix cinerea*; 5, *S. viminalis*. The *Kniphofia* had fallen to pieces.—*Zuri-h.* Both garden forms of *Aster ericoides*.—*W. H.* 1, *Ulmus montana pendula*; 2, a Poppy; 3, *Sedum rupestre*; 4, *Iberis*; 5, *Saxifraga hypnoides*; 6, 7, *Saxifraga*, perhaps *granulata*; 8, *Sedum sexangulare*; 9, *Rondeletia speciosa*; 10, *Saxifraga*; 11, a Phlox. All wretched scraps, mostly without flowers.—*E. M. W.* *Cattleya Eldorado*. A white petalled form of it.—*L. A.* *Justicia carnea* of gardens. The Ivy-leaved *Pelargonium* could not rightly be shown in the Zonal Class.—*P. W.* *Stanhopea oculata*, and *Cattleya intermedia*, both very fine varieties.—*Jones.* *Pteris argyræa*.—*G. C. L.* *Lonicera Ledebouri*.—*Huish Elscopi.* "Enclosed" did not come to hand.—*M. A. S.* *Clematis cirrosa*.

NECTARINES AND PEACHES IN FORCING-HOUSE FACING NORTH: *A. N.* It is very unusual for these fruits to be planted in forcing-houses facing the north; and in the case of trees fruiting late, it would be impossible to mature the wood sufficiently to ensure a crop of fruit the next year. With early-ripening fruit it might be done. You are too far north for this kind of house to be a success.

OAKS: *Young Gardener.* We cannot tell from the leaves only, but we imagine your leaves to be those of *Q. pedunculata*. The galls originate in the axil of the leaves.

PEACH-LEAVES: *Correspondent.* The characters derived from the leaf-glands are very constant, and not very subject to vary. Dr. Hogg has kidney-shaped glands, Grosse Mignonne has round glands, and Stirling Castle has no glands. See *Journal of the Royal Horticultural Society*, vol. xxii., part 2, p. 208.

PLUMS FOR A WALL WITH NORTHERN ASPECT: *Gardener.* Washington, Coe's Golden Drop, Coe's Late Red, Columbia, Brahy's Green Gage, Bryanstone Gage, Blue Imperatrix, Bleeker's Yellow, Belvoir, Angelina Burdett, Prune d'Agén, Fotheringham, Guthrie's Late Green, Jefferson, Kirke's Late Rivers, Purple Gage, and Reine Claude de Bayay Hative. These are excellent late and early dessert varieties, which would come into use later than when planted in the full sun or on walls with other aspects, the later ones greatly prolonging the season of Plums. The shoots should be laid in rather thinly if the trees are grown of fan-shape.

TOMATO SEEDLINGS: *C. S. B.* Probably the seedlings are growing together too thickly. The condition of some of them is due to some detail in their cultivation, and not to fungus.

TWELVE ROSES FOR FORCING: *Chronicle Reader.* Teas—Adam Belle Lyonnaise, Catherine Mermet, Comtesse Riza du Parc, Francesca Krüger, Homère, Gloire de Dijon, Madame Cusin, Madame de Watteville, Madame Hoste, Madame Willermoz, Niphotos, May Rivers; or the following Hybrid Teas may be substituted for an equal number of Teas—Camoens, Grace Darling, Cheshunt Hybrid, and Viscountess Folkestone.

WALNUTS: *A. K.* asks what creature can have perforated his Walnuts near the pointed end? We can only suppose it to have been some bird. A squirrel would not have left the task incomplete.

COMMUNICATIONS RECEIVED.—*J. W. Benson (Limited).*—*J. U.*—*W. W.*—*E. G.*—*L. C.*—*W. H.*—*Galway*—*S. B.*—*Margate*—*A. B.*—*Subscriber*, Worksop—*M. P. R.*—*W. D.*, Suffolk—*W. D.*, Elmstree—*J. E. P.*—*A. J. L.*—*J. C. W.*—*G. J. F.*—*G. C. H.*—*Nichols*—*Paul Walter* (nothing has yet arrived from Magdeburg)—*J. E. W.*—*H. S.*—*J. S.*—*J. Udale*—*W. W.*—*Scots Fir*—*J. M.*—*B. C.*—*G. E.*—*C. J. M. S.*—*Young Gardener*—*H. R. M.*—*Fisher, Son, & Sibray*—*B. C.*, cannot name—*J. W.*—*A. O.*—*W. R.*—*A. S.*—*L. B.*—*D. W. S.*—*Robert Piper* (answered above under "H.")—*H. A. P.*

(For Markets and Weather, see p. x.)



THE

Gardeners' Chronicle

No. 724.—SATURDAY, NOV. 10, 1900.

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IN A COUNTY DOWN GARDEN.

"November take flail, let ships no more sail."

—Old Proverb.

AUTUMN is now in full colour, the Horse-chestnuts are dark crimson and light yellow, the Limes are delicately coloured and drooping, the Ash is still dark green with light green seed-pods, a few red berries of the Mountain Ash still remain, and still the Spanish-Chestnut is clad in its burnished green and gold, and notched foliage. The Snowberry, with its waxen balls, is used in several places here for a hedge, but Evergreen Privet is a quicker grower, and a better fence. Cherry-trees grow crimson and russet day by day, and young Beech-hedges are already brown. The Maples have lost the gloss of summer, the red haws and the crimson buckies are nearly all the colours of berries that we see. The Poplars will soon be as bare as mast poles, and then winter, with its moaning winds, will steal in.

We have just got our garden well cleaned-up for the autumn, and have planted a new plot of St. Joseph Strawberries in a south border, in order to give them the benefit of all the sun now shining. We have, besides the bulbs already planted, ordered some others which we will get in this month. These consist of English Iris, Dog's-tooth Violets, Tigridias, Hyacinthus candicans, Allium neapolitum, Alstroemerias, Babianas, Ornithogalums, Tritonias, Tritelas,

and Zephyrantes. The Kafir Lily, Schizostylis coccinea, is now flowering freely, and is useful with Madame Desgranges Chrysanthemums for cutting. Cactus Dahlias are very fine this year, and we prefer them to any of the other varieties, but I must confess that I am often disappointed in the size of the plant one gets when purchasing. Cannas have flowered very freely, and, like the white-throated Pentstemon Apple Blossom, deserve a bed to themselves.

Night-scented Stock, should, if possible, be planted near to the entrance of a garden, as the approach is decidedly enhanced by a well chosen fragrance. Tuberoses should be grown by everyone who has command of a greenhouse, as they too are an acquisition, and a greenhouse or garden without fragrance is wanting in one of its most attractive elements. Tea Roses, Carnations, Mignonette, Sweet Lavender, Thyme, and even the modest Musk, have all their associations, and who would be without the Violet, or the Lily of the Valley! A strong clump of Christmas Roses looks green and flourishing. The plant requires plenty of well decayed manure and leaf-mould. We have just finished planting perennial Phloxes, new Peonies, new Irises, Montbretias, Mimulus, and Fuchsias; and have put in a number of cuttings of Roses, Lavender, Pentstemons, Myrtles, and common red Fuchsias.

Our Hyacinths are covered up in their pots, and are placed in the dark until their roots form and work freely. The Evening Primrose, Oenothera, is very useful, as well as being fragrant; we have planted some of these, together with two new Sedums. These I have not labelled yet, but will do so some day when I get time and opportunity. We use zinc labels, and fix them in the ground to any plants with a forgettable name. Labelling has many advantages, and it is so satisfactory to be able to turn one up, and show a rare plant's name to a friend. I always write the name of the year, and the place the plant came from, on my labels, as in this way one is able to trace good and bad productions.

I have inserted a number of cuttings of Ampelopsis Veitchi under a spare light, and in this way hope to raise a stock. The beautiful autumn bronze of the foliage is very fine here now. A white Passion-flower (Constance Elliot) has grown 10 feet here this season.

We have made up a spring border with white Arabis and Forget-me-Not. Purple Crocuses, white Arabis, yellow Alyssum, and Forget-me-Not, in lines, make a bright spring border, and enliven the garden in the early months of the year. We have planted about fifty clumps of single blue Violets for spring flowering, and intend filling a small frame with Princess of Wales for early bloom. Montbretia Potsii have now been divided up into smaller clumps. Each of the bulbs is planted singly, 3 or 4 inches apart, in strong soil. The Montbretias were all very fine here this year. We have given many of these to friends, as well as Feather-grass—Stipa pennata; and when one can spare anything of this nature, the neighbourhood is beautified at little cost.

The harvest thanksgiving here is over, it was a splendid peal of earnest praise and thanksgiving for a bountiful harvest. The chancel was decorated with Chrysanthemums and Marigolds, fruit and vegetables, Pampas-grass, and long trailing green Irish Ivy; the pulpit was festooned with Virginian Creeper and Tritomas, or Kniphofias; the pillars were circled with Irish Ivy, and based with yellow sheaves of corn, and the brackets of burnished brass were

enfolded with dark red bracken and Chrysanthemums; and the sermon on the text "Whatsoever a man soweth, that shall he also reap," was singularly impressive and appropriate. We are making up a new Rose-bed here now, and have taken out the soil about two feet deep; at the bottom of this excavation we have placed a layer of stones, and over this a thick layer of leaves and road rubbish, then a good thick layer of decayed farmyard-manure, then old sods cut in pieces, and finally, some good rich loam. When this settles down, we will plant our new Roses, and mulch them with another layer of good farmyard-manure. W. S.

NEW OR NOTEWORTHY PLANTS.

HELICHRYSUM GULIELMI (Engler).*

(SEE FIG. 103, P. 334.)

H. GULIELMI is the first to bloom of a set of three, including H. Newii † (Oliver & Hiern), and a species allied to H. formosum, but not named, of which the seed gathered on Mount Kilima-njaro in Central Africa, was sent to that well-known introducer of fine new plants, Herr Max Leichtlin of Baden-Baden, by Dr. Hans Meyer of Leipzig. These have made most vigorous growth, planted out in my garden during this summer, and have grown into much larger plants than H. Gulielmi, but as yet show no sign of blooming. They have been carefully lifted into big pots, as they are of course not in the least degree hardy, and I quite hope to see them bloom in the greenhouse during the winter, or coming spring. H. Gulielmi, named after the German Emperor, is most free blooming, everyone of the six shoots of my, by no means over-large plant, having produced a good bunch, similar to the one figured, p. 334, and bearing from fourteen to eighteen pure white flowers, some of them on separate footstalks, and others in two's, three's, and four's, on a stem. I hear from Herr Leichtlin, that it is very variable, both in size of head, and colour of flower, some plants bearing bunches of flower twice as large as others, and the colour varying from deep rosy-red, to several degrees of whiteness. It is easily propagated by young shoots freely produced round the base of the stem, which can be taken off often with some roots, and soon grow into bushy plants. I believe it comes nearest to Helichrysum Mannii, figured on plate 5431, of vol. 90 of the Botanical Magazine, but in my opinion it is a much less coarse, and therefore more desirable plant than that variety. W. E. Gumbleton.

* *Helichrysum Gulielmi* (Engler).—"Caule dense folioso atque foliorum costis dense lanatis; foliis inferioribus reflexis, mediis atque superioribus arrectis; foliis utrinque, imprimis subtus, lanatis lanceolatis, apicem versus longe argutatis acutis; capitulis pluribus pedicellatis, corymbum densum efformantibus; bracteis involucri numerosis multiserialis lanceolatis, inferioribus brevioribus purpurascensibus, superioribus longioribus lineari-lanceolatis hyalinis; floribus omnibus hermaphroditis; receptaculo glabro; acheniis parvis compressis glabris; pappo sordido.

"Caulis ascendens 4-5 cm. longus. Folia inferiora atque media fere 10 cm. long., inferne 1-5 cm. lata, basi paullum decurrentia, costis subtus paullum prominente. Bractee pedicellos inferiores fulcrantes 5 mm. longae, 5 mm. latae, superiores gradatim minores et angustiores. Pedicelli inferiores 2-3 cm. longi. Bractee involucri inferiores 5 mm., superiores 1-5 cm. longae, 2-3 mm. latae. Receptaculum 1-5 cm. dimetiens. Florum tubus 4 mm. longus, achenium 1 mm. longum.

"Kilim andscharo in der Waldzone von 1400-2800 m."—Engler, *Ueber die Hochgebirgsflora des Tropischen Asia* (Berlin, 1892), p. 426.

† H. *Newii* (Oliver & Hiern).—Fruticose leafy; branches (upper) terete, as well as the leaves, covered with appressed silvery tomentum. Leaves linear-oblong obtuse, mucronulate revolute at the margins, sessile, scarcely narrowed at the base, coriaceous entire, 1 to 1½ in. long by ½ to ¾ in. wide. Capitula widely campanulate, about 1 in. long and wide, many flowered, terminal, solitary, sessile. Scales of involucre multiserial, loosely imbricate, glabrous; inner linear, narrowed to obtuse apex ½ in. long; outer lanceolate, gradually narrowed to subobtusely or subacute apex, successively shorter. Receptacle bracteate, with strongly acute-toothed pit-margins. Pappus barbellate above. *Flora Trop. Africa*, iii. (1877), p. 349.

Kilima-njar, highest zone of vegetation. Dr. C. New.

KNIPHOFIA MULTIFLORA.

A plant of this is in flower in the Cape-house at Kew. It appears to have been first introduced and named by Herr Max Leichtlin, the first record of it, so far as I can find, being a note published in *The Garden* in October last year, where he says the leaves of his plants were 6 feet long by 3 inches broad at the base, and the flower-spike over 7 feet

almost closed at the mouth, three-eighths of an inch long, white, with spreading filaments an inch long, also white, with pale yellow anthers. As a species, it is distinct from all others in cultivation, its nearest affinity being *K. foliosa*, from which, however, it differs in many ways. As a garden plant it has decided merit, the effect of the tall spikes of white flowers suggesting an *Eremurus*.

containing so many noble species, the present one will not compare favourably with its associates. Nevertheless, it is not devoid of interest to the botanist, and may even serve as a foil to the more brightly-coloured species. The following is a description of Mr. Gumbleton's plant:—

Leaves about 3 to 4 feet, by $\frac{3}{4}$ -inch, linear, gradually tapering to the point, three-sided, midrib



FIG. 103.—*HELICHRYSUM GUELIELMI*: PLANT COVERED WITH WHITE DOWN, FLOWERS GLISTENING SILVERY-WHITE. (SEE P. 333.)

high. The Kew plant, which came from Baden-Baden, has leaves $6\frac{1}{2}$ feet long, $1\frac{1}{2}$ inch wide at the base, with a deep keel, scabrid margins, and glaucous surface; the flower-spike is $5\frac{1}{2}$ feet, stout, with a smooth cylindrical scape bearing a few scattered bracts, and covered for $1\frac{3}{4}$ foot with closely-packed flowers. These are cylindrical,

As to its habitat and hardiness I know nothing, beyond that it has been grown in a pot partly in a cold-house and partly out-of-doors at Kew. It is also flowering in Mr. Gumbleton's garden at Belgrove, Cork. W. W.

[We have recently received from Mr. Gumbleton a specimen of this new *Kniphofia*. In a genus

deeply depressed above, very prominent beneath, margins revolute, finely serrulate. Spike many-flowered, on a long, erect, cylindrical stalk. Flowers densely packed, ascending shortly pedicellate, pedicels articulate, with a membranous, triangular, acuminate bract at the base. Perianth greenish, $\frac{3}{4}$ -inch long, tube dilated at the base

contracted below the centre, expanding into a trumpet-shaped limb, with six oblong, membranous segments, with a reddish midrib. Ed.]

CROCUS NIVEUS, n. sp.*

This handsome species is now flowering here in a cold frame, and at Kew in the open border. It is remarkably robust and vigorous, and quite the best white-flowered autumn *Crocus* I have ever seen, the flowers are larger and of greater substance than in *ochroleucus* and *hadriaticus*, and do not seem to suffer so much from wet. I received my bulbs with other *Croci* from Holland in 1898, but up to the present time cannot trace its origin, and have not been able to obtain it again, it came to me under the name of *carpetanus*, a mauve spring-flowering species; it flowered here first in December last year, and seeing it would not agree with any described species, I sent a flower to Mr. Baker, who pronounced it a new species.

I learn that the plants at Kew were received from Herr M. Leichtlin under the name of *C. marathoniensis*, which, however, is a form described by Heldreich, and of which Maw, in his *Monograph of the genus*, says:—

"In *C. marathoniensis* of Heldreich, I can find no departure from *C. Boryi*, except in the stigmata, which are less branching, and only reach to the level of the summit of the anthers. I place it therefore as a variety only of *C. Boryi*."

The characters that distinguish *C. niveus* from *Boryi* are given above, and of course show that it cannot be *C. marathoniensis* of Heldreich. *E. Augustus Bowles*.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM PHALÆNOPSIS.

A FLOWER of a variety exhibiting marked differences from the type, especially in the shape of the lip, is sent by Mr. Jas. Cypher, Queen's Road Nursery, Cheltenham, who states that all the flowers on the plant are similar in their peculiar structure. The flower is perfect, and the sepals and petals are as in other forms. The lip is much more open than usual, the side lobes at their nearest point being $\frac{3}{4}$ of an inch apart. The angle dividing the front from the side lobes is also less, giving the appearance to the whole lip of an elongated triangle. The central area of the lip is of a purple tint; the latter extends down the front, and is apparent in lighter hue in radiating lines, which extend over the side lobes. It is not handsomer than the ordinary forms, but its peculiar structure arrests attention.

* *Crocus niveus* (Bowles, n. sp.).—Autumnalis, cormo globoso; tunicis exterioribus tenuiter reticulatis; spatula basali supra ovarium producta, spatula vera diphylla; foliis < synanthiis anguste linearibus albo-vittatis margine revolutis; perianthii tubo elongato, fauce aurantiaco glabro, segmentis oblongis albis; antheris pallide luteis, filamentis nudis luteis; stylis coccinei ramis in segmentis capillaribus cissis.

DESCRIPTION.

Corm irregular, globose, from $\frac{3}{4}$ to 1 inch in diameter; tunic of fine, slightly reticulated fibres.

Sheathing-leaves 5, from $\frac{1}{2}$ to 3 inches in length, falling short of the proper spathe.

Proper leaves 6, appearing before the flowers, and at flowering time reaching to their level, narrow, $\frac{1}{16}$ in. wide, glabrous; keel flat, edges reflexed.

Basal-spathe $2\frac{1}{2}$ in. long, exceeding the ovary, tip pointed and foliaceous.

Proper spathe diphyllous, foliaceous at the top, 4 inches in length.

Perianth, tube $5\frac{1}{2}$ inches long, from ovary to throat nearly 4 inches, yellow; throat orange, glabrous; segments $1\frac{1}{16}$ inch long, $\frac{3}{4}$ -inch wide, pure white, orange at base.

Anthers hastate, yellow, $\frac{3}{4}$ -inch long, three times as long as the yellow, naked filaments. Style divided a little below the tips of the anthers into scarlet stigmata divided into capillary divisions, greatly exceeding the anthers.

Flowering from October to December. Capsule and seed unknown.

Nearly allied to *Crocus Boryi* (Gay), from which it differs by its yellow anthers, naked filaments, the presence of a basal spathe, and the fibres of the corm-tunic being reticulated.

CYNORCHIS PURPURASCENS.

The true plant of this name is now flowering for the first time at Kew, having been introduced last year from Madagascar. It differs considerably from the two previously known, viz.: *C. grandiflora* (Bot. Mag., t. 7564), and *C. Lowiana* (Bot. Mag., t. 7551, as *C. purpurascens*). These two have narrow leaves and scapes, one to two rarely more flowered; whereas in the plant under notice, the leaf is from 12 to 16 inches long, from 2 to $3\frac{1}{2}$ inches wide, fleshy, pale green with purplish margin, and except one plant which has two leaves, all those at Kew are monophyllous. The flower-spike is from 6 to 8 inches long, and bears from six to twelve flowers in a short raceme, each subtended by a bract $1\frac{1}{2}$ inch long; petiole 2 inches long; flower an inch long and wide; sepals oblong, slightly incurved, dorsal forming a hood; lip spreading, flat, four-lobed; spur over an inch long. The whole flower is fleshy, and coloured bright rosy-mauve, the lip darker, with a white patch in the middle. This is a very remarkable and decidedly attractive Orchid. Under cultivation it has proved more at home in a cool-house than in the stove. W. W.

TWO NEW CALANTHES.

Calanthe madagascariensis and *C. Warpuri* are two new species of recent introduction which may now be seen in flower in the Orchid-house. They are nearly allied to *C. natalensis* (Bot. Mag., t. 6844), and the better known *C. sylvatica*, which they resemble in rootstock, broad, plaited leaves, and in the general characters of the flowers; they differ, however, in their smaller stature, and in other minor characters. The largest leaves are 8 inches long by 3 broad, the tallest spike 6 inches, and the flowers in *C. Warpuri* are $1\frac{1}{2}$ inch wide, the sepals ovate acuminate, white, the petals much narrower, also white, and the lobed lip dull purple, changing finally to orange. *C. madagascariensis* is smaller, the sepals and petals are sub-equal, rosy-mauve, and the lip is dull magenta with a white spot at the base. Both species have been figured for the *Botanical Magazine*. W. W.

"DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDÉES."

The plants figured in the September number are the following:—*Cattleya Eldorado*, Linden; *C. Vulcan*, Cogniaux; *Cypripedium aureum* var. *Cyrus*, Cogn.; *C. adrastus* var. *Hursti*, Cogn.; *C. cardosorum*, Fr. Peeters; *Epidendrum elegantulum* var. *leucocochilum*, Hort.; *Miltonia Regnelli* var. *Veitchiana*, Cogn.; *Odontoglossum crispum* var. *Madame Emile Praet*; *O. Hunnewellianum* var. *Madouxianum*, Hort.; *O. luteo-purpureum* var. *Mulus tenebrosus*, Hort.; *O. coronarium*, Ldl.; *Oncidium nubigenum*, Ldl.; *Spathoglottis aureo-Vieillardii*, Hort.

CATTELEYA LABIATA COOKSONIÆ.

This beautiful form of *Cattleya labiata* is flowering in the collection of Samuel Gratrix, Esq., West Point, Whalley Range, Manchester (gr., Mr. McLeod), who kindly sends a flower of it. The sepals and petals are pure white, and the finely-formed crimped-edge labellum is also white with the greater part of the front lobe of a bright violet-purple colour. At the base of the lip there are some purple markings, and in the centre a slight chrome-yellow tinge. Mr. Gratrix has two plants, obtained as *C. labiata* Cooksoniæ; but this year he remarks that one of them has no purple markings at the base of the lip. It is of the same class as the beautiful white *Cattleya labiata* Gilmouriæ, a plant of which is also in the Whalley Range collection. In both forms the broad, pure white margin to the brilliantly-coloured lip gives an attractive feature.

TRADE NOTICE.

MR. J. E. WILSON, a departmental foreman at Messrs. J. Peed & Sons, has commenced business as a nurseryman and florist at Normanby Hall Gardens, near Middlesburgh.

THE GROVE, STANMORE.

MRS. BRIGHTWEN, like her cousin Mr. Hanbury, whose fine gardens at La Mortola have a world-wide reputation for rare and beautiful plants, allows her love of flowers the widest range, admitting all that are beautiful or curious, and leaning always to those which are uncommon or which exhibit singular or distinct features of flower or foliage.

The Grove gardens, situated on the edge of Stanmore Common, preserve all the natural beauty of outline formed when they were first laid out many years ago. New and interesting features have frequently been introduced by Mr. John W. Odell, the gardener at The Grove, who is a sincere lover of plants of all kinds, his work among them being rendered all the more pleasant in consequence of his knowledge of the botanical and scientific side of plant-lore. What are known as bedding-plants are not countenanced at The Grove, the open garden, and especially the beds on the elevation beyond the smooth grassy slope, studded with gigantic trees in front of the dwelling-house, being beautified by hardy flowers and bulbous plants. Among these many rare species are to be found, some of which have proved quite hardy here though generally considered greenhouse plants in other gardens. Among the most striking instances are *Nertera depressa*, which has thoroughly established itself in large patches among the dwarf moss and grass beneath the trees, its little scarlet berries just peeping up between the other herbage. How it got there is not known, but it is supposed to have strayed from one of the beds where it was used as an edging many years ago, and to have taken care of itself, and increased its area ever since. Another interesting instance is *Agapanthus umbellatus*, furnished with fine heads of much darker blue colour than is seen on greenhouse specimens, and which has bloomed annually, and remained in the open ground five years. In other parts are Cape *Crinum*, *Eucomis punctata*, and other Cape bulbs, thoroughly acclimatised, and further extensions in that direction are contemplated. In one corner out-of-doors was a strong specimen of *Ephedra altissima*, with curious Casuarina-like growth; and among other uncommon shrubs noted was *Nandina domestica* in excellent health, and *Abelia rupestris* flowering well. The rockeries and ferneries contain many interesting plants, and among others making a fine show in the borders in large masses were *Cleome pungens*, with fine heads of bloom; *Salvia patens*, a mass of bright blue; *Calceolaria Burbridgei*, *Crocus speciosus*, a fine show of *Verbena venosa*, a pretty bed of the old *Cuphea platycentra*, patches of *Plumbago Larpentæ*, *Nothoscordum fragrans*, *Gladioli*, &c.

The kitchen and fruit gardens are brightened by broad borders of herbaceous plants on the cross walks, the principal things in flower now being the *Asters*, different species of *Helianthus*, *Eryngium*, *Salvia Horminum*, *Anemone japonica*, *Phygelius capensis*, *Gaillardias*, *Scabiosa*, *Colchicums*, *Sedums*, and other showy flowers. *Phytolacca decandra* makes a good show of racemes of fruits; and *Physalis Francheti* is also very effective.

THE PLANT HOUSES

contain a varied and interesting collection of plants, the subjects ranging from curious plants with structural peculiarities, such as *Desmodium gyrans* to florists' flowers and Orchids. The conservatory, with its setting of large Palms, brightened with the ordinary showy flowers of the season, contains some very remarkable specimens, one of which is a plant of the singular *Amaryllid*, *Brunsvigia Josephina*, with an immense head of flowers, each borne on its long, stout stalk, the whole head being some 4 feet in diameter. Suspended overhead, *Rodriguezia fragrans* was sending out its white flowers.

In the largest stove-house, the arrangement is very effective, the roof being clad with climbers, among which in flower are large specimens of *Gloriosa superba*, with many scarlet and yellow

Lily-like blooms; various species of *Aristolochia*, the most singular of which is *A. trilobata*, with flowers like the leaf-appendages of a pitcher-plant, the lid being continued into a drooping blade; also the white *Dipladenia boliviensis*; the singular *Ceropegia perforata*, &c. The centre bed has a tall specimen of *Papyrus antiquorum*, with its graceful foliage reaching to the glass of the roof, some Musas, Palms, and specimen Ferns. On the stages are plants of hybrid *Anthuriums*, bearing showy spathes of white, pink, and scarlet; together with some *Dendrobiums*, &c., the most remarkable of which are *D. Dalhousieanum*, grown into very large and vigorous specimens. In the border outside this house, *Aloysia citriodora* is acclimatised, and in a low unheated frame is a splendid lot of Disas, one half being filled with *D. racemosa*, *D. tripetaloides*, *D. × Veitchi*, *D. sagittalis*, and a few *Satyriums*, and the other with vigorous plants of *D. uniflora* (*grandiflora*). At the approach of frost, these Disas will be removed to a cool house, but in summer again returned to the unheated pit.

One of the greenhouses has a plant of *Streptosolen Jamesoni* covered with its orange-coloured flowers, fine scarlet *Salvias*, *Begonias*, *Hæmanthus coccineus* in bloom, and some *Nerines* showing flower. One house has a small healthy lot of *Odontoglossums* and *Masdevallias*, a few of which are in flower. Another of *Miltonia vexillaria*, *Cœlogyne cristata*, *Lælia autumnalis*, *Cypripediums*, &c., two of the most remarkable in flower being *Cœlogyne speciosa*, and the Natal *Stenoglottis longifolia*. One house has number of *Lælia anceps* in spike, and various other Orchids, the house being made bright with the scarlet *Clerodendron fallax*. For winter flowering, some good plants of *Cattleya labiata* promise well, and the resting *Dendrobiums* in the vineries are setting well for bloom. The Gardenia-house also contains winter-flowering *Calanthes*, and on all sides evidence of care and skill is visible. *Chrysanthemums* are grown in large quantity, and are now making a good show. They require much attention, but few plants better repay the cultivator for his care.

ABNORMAL GROWTH OF AGARICUS ALBUS.

The accompanying illustration (fig. 104) shows an example of *Agaricus albus* with five additional smaller caps produced from the gills; the fifth cap is on the side of the fungus not illustrated, and is larger than the four drawn. It is remarkable that all the five additional caps grow on one plane near the middle of the gills, so that the head of the fungus with its additional growths is something like a "Hen-and-chickens" Daisy. It is much easier to say what certain things are, than to explain their meaning, or to state what force brings abnormal growths about, especially in Cryptogams. Some abnormalities are frequent, others rare, and the present instance is probably very uncommon. The example was found in Highgate Wood by Laurence Smith a few days ago. The specimen is preserved in fluid in the British Museum (Nat. Hist.). At this institution there is a considerable collection of careful drawings of abnormal fungi, arranged in botanical sequence. They are well worthy of the attention of botanists, for a fact that cannot be explained by one example, can sometimes be made out by the study of a series. *W. G. S.*

THE HARDY FLOWER GARDEN.

LYTHRUMS (LOOSESTRIFE).—Of ten species, only three are generally cultivated in British gardens. One of the prettiest is *Lythrum alatum*, from North America. It is not often seen in cultivation, but has much to recommend it to lovers of hardy flowers. During summer and autumn this Loosestrife has been very attractive here, flowering profusely, as it will continue to do until cut down by frosts. In general character it differs considerably from any other of the genus, having a half-

shrubby habit, and growing in height from 2 to 4 feet. Its flowers, borne abundantly on twiggy branches, about half an inch across, are beautiful deep purple, six-petalled, almost sessile, and furnished with two very distinct bracts. The leaves are ovate oblong, and cordate at the base. The plants grow best in sandy soil, but are by no means particular in this respect, and may be readily increased from cuttings of the young growths as well as by seeds. Its hardiness is beyond question, and the plant may be recommended as of exceptional merit. In some gardens the plant is known as *L. Kennedyanum* and *L. Vulneraria*.

L. Graefferi was introduced from Italy in 1800, and was described by Loddiges in his *Botanical Cabinet*, t. 1338. Although reputed to be somewhat tender, I have had no difficulty in the South, in keeping it through the winter outside; but this species may need protection in cold or exposed situations. It is quite distinct from *L. alatum*, and forms a very attractive evergreen trailer, suitable for baskets or window-boxes, as well as for the herbaceous border. The bright pink flowers are



FIG. 104.—*AGARICUS ALBUS* WITH FIVE SECONDARY
PILEI SPRINGING FROM THE GILLS.

solitary, in the axils of all the upper leaves, and are produced in summer and autumn.

L. Salicaria, being a British plant, is more familiar, but its excellent garden form, *L. s. superbum*, is much to be preferred. This form has much larger flowers, deep reddish-purple in colour, forming whorls, on long, leafy stems. It grows from 3 to 5 feet in height, and is an attractive border plant, but is even more valuable to plant by the side of a stream or pond.

L. virgatum, an Austrian species, is often met with in cultivation, flowering abundantly during the summer months. Its deep purple flowers are produced in threes, on stems of a somewhat shrubby nature. Its culture is very easy, and it may be readily increased by means of cuttings, or by division of their roots.

Of the rarer species, mention may be made of *L. lineare*, the flowers of which are pure white, produced in July and August. Not having seen this plant for some years past, I am doubtful if it is in cultivation at the present time.

L. diffusum, *L. myrtifolium*, from North America, as well as *L. tomentosum*, from the Caucasus, are also species rarely seen, and perhaps for general purposes not so well adapted for decoration as those already mentioned. *E. S., Woking.*

PLANT NOTES.

A BIGENERIC HYBRID (*VALLOTA × AMARYLLIS*).

Two years ago I saw in the garden of Colonel Tremayne, at Carclew, near Falmouth, some plants in flower which were noticed in the *Gardeners' Chronicle* at the time as "Seedlings of *Vallota purpurea*, with flowers of a distinct pleasing shade of cerise, which would win the special favour of bulb fanciers if sent to one of the meetings of the Royal Horticultural Society." Colonel Tremayne kindly sent two of the bulbs to Kew, stating that they were raised in the garden of Mr. Arthur Rix, of the Miner's Bank, Truro. When they flowered here they attracted much attention, and on the suggestion of Mr. Elwes and Mr. Bennett-Poe, I wrote to Mr. Rix for the history of these seedlings; he kindly replied as follows:—

"I will gladly tell you what I can about my *Vallota* seedlings. Some years ago I fertilised a *Vallota* flower with pollen of the *Belladonna Lily*, and got a good pod of seeds, from which I raised about 100 seedlings. Of these nearly ninety were the ordinary scarlet, like the parent, and I threw them away. Two of the others were a pale scarlet, and I have them now; nine others were of the colour of those you saw at Carclew, but varying a little in shade and quality. I subsequently fertilised one of the seedlings with the *Belladonna* again, and only got a weakly pod containing three seeds, two of which grew, but they were much the same as the seed-bearing parent. The seedlings resemble the *Vallota* in not being deciduous—in fact, the only difference noticeable is the thicker necks of the bulbs and the variation in colour.

"I had previously raised seedlings of *Vallota*, but got no variation. I have never known *Vallota* to set fruit unless artificially fertilised. I believe the *Belladonna* must have had some influence on the seeds which produced the seedlings you are interested in. I offered them when they first flowered to a well-known London nurseryman, but as he did not think much of them, I took no further trouble to make them known. I am glad to learn from you that they interested the specialists who saw them at Kew."

Six years ago I crossed the *Belladonna* with *Vallota*, making the former the seed-parent. Good seeds were the result, and there are now half-a-dozen plants from them at Kew. None has, however, yet flowered. The plants resemble the *Belladonna*, but there are differences which appear to me to indicate a successful cross. Evidence is rapidly accumulating in support of the belief, held by some, that the prepotency of some parents is so great that whilst fecundation is due to the foreign pollen applied, the characters of the seed-bearing parent completely or almost smother those of the pollen parent. *W. W.*

NEW VARIETIES OF ARCTOTIS.

The beautiful Marigolds of Namaqualand in Africa are only now known in European gardens through two of the many varieties to be found in their native country, namely, *A. aureola*, with fine bright orange flowers, most useful as a winter-bloomer in the greenhouse; and *A. aspera arborescens*, with blush-white flowers, and a much more rampant grower than the first-named kind. There is another variety in cultivation named *A. acaulis*, but it is shy-blooming, of a rather dull shade of yellow colour, and comparatively worthless. Over thirty varieties of these beautiful Composites were in cultivation at the end of last and beginning of this century in the gardens of the Emperor of Austria at Schönbrunn near Vienna, and were well figured by Jacquin in his splendid work, in four volumes folio entitled *Herbarium Schönbrunnensis*, published at Vienna between the years 1797 and 1804, but all these, with the exception of the three above-mentioned, have been long lost to cultivation. Through the kindness of Mr. Ayres, a col-

lector of Cape plants, whose brother visited the home of the *Arctotis* in the course of last year, I received in the month of February last the seeds of three varieties, of course without any specific names, but labelled merely "large white flower." Another large white of an entirely different habit of growth, and deep orange with black central markings. Of the two white-flowered sorts, only a single seed of each germinated, and they were as stated quite distinct from one another. One of these I hoped to bloom during the coming winter or spring, the other unfortunately from some unknown cause took sick and died, but I have succeeded in rooting two small cuttings from its side shoots, so hope to see it also bloom in due time. Of the third variety, four plants came up, and two of these have already bloomed in my greenhouse.

flowers, I believe, of great beauty. They treat it as an annual, and have grown it entirely in the open air during the summer, where it has ripened seed freely, which they intend to offer early in the new year. This should be a most welcome acquisition to our gardens.

Since sending you my notes on new varieties of *Arctotis*, I have received from Erfurt a plant of the variety last mentioned in my notes under the name of *A. grandis*, or *stoechadifolia* (the Lavender-leaved), and I have formed two conclusions there arent, first, that it is not an *Arctotis* at all, but rather some form of coarse growing *Calendula*; and second, that even if it were an *Arctotis*, it could not possibly be *A. Stoechadifolia*, as its foliage in nowise resembles that of a Lavender, but exactly that of an ordinary Marigold, which makes me think it is a

NURSERY NOTES.

MESSRS. JACKMAN AND SONS.

THE firm of nurserymen at Woking, trading under the name given at the heading of this note, is of long standing, and is well known in this country in connection with the Clematis, a flower they have done more than anyone else in these islands to enoble and improve by crossing. This is, however, by no means the chief part of the business carried on at the Woking Nurseries, although still an important one; for Conifers, evergreen and deciduous trees and shrubs, Roses, and select varieties of all kinds of hardy fruits, are grown on the 200 acres of land of which the nursery consists. Fruit-trees and fruit-tree stocks

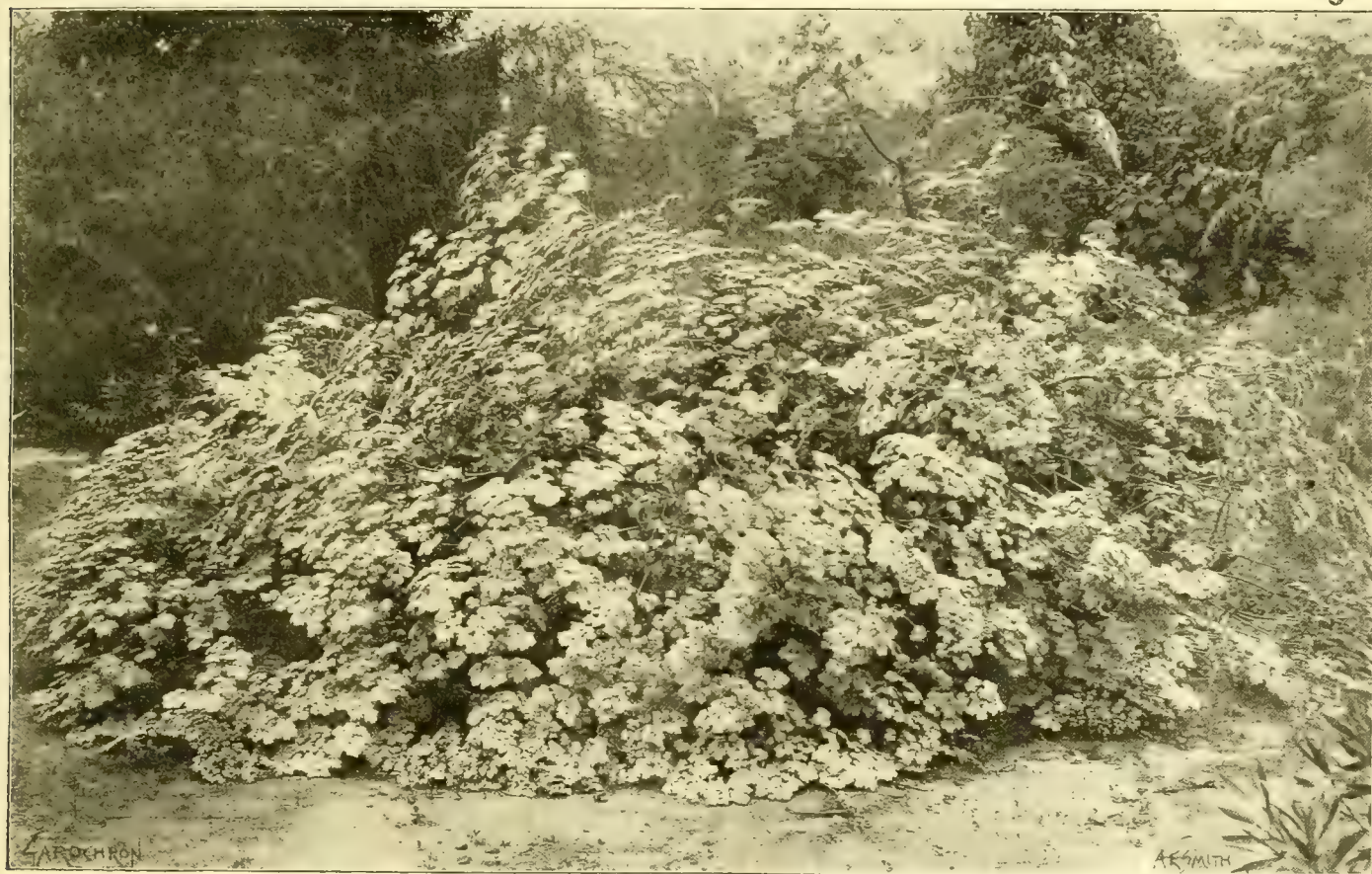


FIG. 105.—ERIOGONUM GIGANTEUM.

The first flower and a couple of the small, glaucous leaves were, of course, sent to the Royal Herbarium at Kew for identification, where it was pronounced to be a new species; but a name could not be given to it without further material for study and comparison with the dried specimens in the herbarium.

To afford this I intend to present one of my plants to the Royal Gardens, where I hope a name will be given it. It is a very beautiful flower, of a deep orange-colour, with distinct black markings at the base of each petal, which exactly resemble a capital W in shape, and are alternately large and small, as W W W W, which presents a very singular appearance. The flowers are borne singly, each on a separate stem of its own, rising quite erectly from the centre of a crown of leaves. It also seems to be extremely free-blooming, as one of my plants, though only nine months old is now showing five buds from as many separate crowns. Another new species named *A. grandis* or *stoechadifolia* (the Lavender-leaved), has also bloomed this season in the garden of Messrs. Haage & Schmidt, of Erfurt, and has large white

Calendula. I hope it may turn out when it blooms next year to be a good new Marigold, as I never heard of one with large white flowers. W. E. Gumbleton.

ERIOGONUM GIGANTEUM.

OF the 100 or more species of this exclusively American genus of the Buckwheat family, more than half belong to California. Here they are seen covering the driest hillsides with their round heads or umbels of tiny white flowers, shading to reddish colour, great favourites with bees, and also relished by cattle. Not a few species are well worth introducing in gardens, probably none better than *Eriogonum giganteum*—truly a giant among its humble congeners. This is a native of Santa Catalina Island, Southern California. The specimen illustrated (fig. 105) is growing in the grounds of the Southern Californian Acclimatising Association, Santa Barbara. It measures some 15 feet across—a striking plant altogether. Dr. F. Franceschi. [See *Gardeners' Chronicle*, March 1, 1890. Ed.]

occupy about 40 acres, and next to these in extent come forest-trees, for which the firm is justly famed. Nor is this a matter for surprise, seeing that the friable, moderately deep, light loam of which a great part of the area consists, favours the rooting of plants, and enables them to be lifted without much loss of the same. In land of this description, growth is usually strong and clean, particularly noticeable in this regard in Pears, Apples, Plums, and Cherries.

A glance at the catalogue issued this year by the firm discloses the fact that instead of a comprehensive collection of varieties being grown for sale, there are only selections of the best of each kind. Of Apples there are about 100; of Pears, fifty; of Plums, thirty-six; of Cherries, eighteen varieties, and so on, for all kinds of hardy fruit grown, the preference being given for those that are found to succeed in every part of these islands. Apricots, Peaches, and Nectarine trees make clean and not too vigorous growth, free from gumming; and the rule to frequently move all kinds of nursery stock makes transplantation easy and safe. The varie-

ties of the Rose seem to be very numerous, and the list of them is a fairly comprehensive one; and Teas and Tea hybrids form a specialty. We do not remember to have observed elsewhere a finer lot of climbing Teas, Polyanthas, and Noisettes growing in pots, especially such as were standing in 7 and 8-inch pots. Of the first we noted Belle Lyonaise, Cheshunt hybrid, climbing Devonensis, Kaiserin A. Victoria, Niphetos, Perle des Jardines, Gloire de Dijon, Madame Berard, and Reine Marie Henriette; of the last were Bouquet d'Or, L'Idéal, Lamarck, Réve d'Or, Maréchal Niel, and W. Allen Richardson. Teas and hybrid Teas, and a few varieties of Noisettes, are largely grown in pots for forcing purposes, the Teas numbering sixty varieties, and consisting of the pick of the section.

Clematis are very numerous, and are found in pots of all sizes, from those in small 60's, grafts of this year, up to those in 20 inches, now matured in bines, and ready for flowering in the months of April, May, and June, affording those lovely specimens covered with immense blooms of the patens and Jackmani types, which delight the visitor to the nursery, or to the Royal Horticultural Society's May Show at the Temple.

Of Clematis in flower, at the present date, there are but few, viz.: *C. calycina*, a cream-coloured flower, dotted on the interior with red-purple, which will remain in flower till the end of the year; and those of the new hybrid type obtained from Clematis coccinea, employed either as pollen or seed-bearing parent. Of these, many plants growing in a sheltered spot in the open ground, had been masses of blooms, as was apparent from the very abundant seed vessels with which they were bedecked; and they were still affording a few flowers, and would continue so to do till sharp frost brought the flora to an end. We may mention the varieties—Countess of Onslow, Duchess of Albany, Duchess of York, Grace Darling, &c. Of the species *C. Davidiana*, a nice stock is being worked up. It may be of value to some of our readers if we state that the varieties belonging to the florida, lanuginosa, montana, and patens sections should be pruned in the months of February and March, the weak and struggling or much crowded shoots being then removed. Clematis of the Jackmani, flammula, and Viticella sections are chiefly summer and autumn flowerers, the flowers of which appear on the young or summer shoots, and as the development of strong young shoots is essential, the pruning of the plants should be carried out in the month of November, cutting them down to within 6 to 9 inches of the soil. One of the most pleasing forms of growing the Clematis is to attach a plant, singly, or in twos or threes of contrasting colours, to a stout stake 6 to 8 feet high, and thus form in a year or two columns of foliage and handsome flowers; and seeing that the species and varieties, with the exception of *C. patens*, will continue in bloom from June till October, nothing can be nicer for planting in herbaceous perennial borders, and as single plants and small groups on the lawn. The crossing of the large-flowered sections of Clematis having failed to produce any striking novelty in recent years, Messrs. Jackman have turned their attention to the crossing of *C. Vioria coccinea*, and the various crosses obtained from it, with some of the large-flowered sections, and the horticultural world is promised some startling novelties next year, with blooms of 9 inches in diameter. We are at liberty to mention that among the large-flowered varieties employed in these crosses are Star of India, Fairy Queen, and Mrs. G. Jackman.

The Conifers in the open ground showed, besides the usual species and varieties found in most tree nurseries, some few departures from the normal type in the matter, either of habit or of the colour of the foliage. Thus for example *Cupressus Lawsoniana* var. *filifera glauca* is a pleasing form that will find favour with planters; *C. L.* var. *lutea* is an improvement, the habit of the plant being more erect, and it is being extensively increased; and *C.*

macrocarpa lutea promises well, and is being similarly worked up; it has stood 18° of frost, and is therefore hardier than the type. *Juniperus chinensis* var. *aurea*, is a variety possessing great constancy of character in the matter of its yellow tint; as also does *J. virginiana aurea variegata*. *Abies canadensis albo-spica* is a prettily variegated variety with the pendulous habit of the type; a golden yellow Deodar, and the Atlas Cedar, with glaucous needles, should not be forgotten. *Taxus baccata sempervirens* is the best Yew with yellowish foliage, retaining its tint in perfection throughout the winter; *Picea pungens glauca* is a telling plant, which planters should not miss; *Pinus radiata* resembles *P. insignis* in its light green colour, but possesses a more bushy habit, and is moreover quite hardy, which the latter in all parts of the country is not. A variety of *Sequoia gigantea*, named *pyramidalis*, differs from the type in being columnar, and not pyramidal. The name is misleading, as it certainly expresses the contrary to be the fact. *Pseudotsuga Douglasii glauca* was stated to be hardier than the type. Why is this so often the case with Conifers? *Taxodium sempervirens albo-spica*, is a pretty variety that becomes quite silvery in the summer months. Hollies, many of them of large-foliaged varieties, as *Wilsoni* and *Mundyi*; *Rhododendrons* do well in this soil without any special preparation being given, as was evident from the deep green tint of their foliage; *Ivies*, *Laurels*, *Berberis*, *Bamboos*, *Garrya elliptica*, *Escallonia*, *Privet* in variety, and *Spiræas* are largely cultivated, and great breaks of most of them were to be seen.

There is not a great deal of glass on the place, and what exists is chiefly devoted to the propagation by grafting, or otherwise of variegated and other Conifers, of Clematises, Roses, *Ivies*, *Ampelopsis*, *Garrya elliptica* (on stocks of *Privet*), variegated *Euonymus*, &c.

At the present time, and till January is out, a considerable proportion of the glass structures will afford protection to *Chrysanthemum* of a few leading varieties, in which a good trade is done locally in potted plants. These are of moderate size, with about a score blooms each, set off by healthy abundant foliage.

It may interest some of our readers to be told that the nursery is situate about one mile from Woking station, and is therefore within forty-five minutes of Waterloo by quick train. It consists of a great variety of surface, although some of the land is level, but by far the larger portion lies on the slope of a hill. We were struck by the general excellence of the stock, and the absence of stunted, aged, examples of trees and shrubs; itself an evidence of the good business done by the firm.

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Pruning.—When much pruning has to be done the operation should commence early, so as to bring it to a close before the spring. There is also the advantage that an early start gives of carrying out the work in usually mild weather. The Morello Cherry-trees should be the first trees pruned; and trees that have received proper treatment will need but a general thinning of the barren shoots, and the removal of spurs and snags resulting from the shortening back of superfluous shoots last winter. I favour the cutting away of such shoots altogether at the time, but some growers convert them into spurs by leaving them about an inch in length. These generally bear fruit, hence the reason for leaving them, but they should be cut clean out the following autumn. The Morello may be severely thinned, and therefore where crowded together many branches and young shoots may be removed to correct this evil with no injury to the trees. The oldest and least productive branches should be taken, and strong young shoots laid in to take their places. Sometimes it may be necessary to shorten-back some of the main branches, for the purpose of making space to lay in young shoots. As a rule, shoots should not be less than 4 inches

apart. If the trees are nailed, let the nails be drawn out, leaving a few to hold the main branches in position; and the trees washed with an insecticide, which should also be driven into the nail-holes. An effectual mode of cleansing fruit-trees is to spray them with "Caustic Alkali Solution," which destroys insects and their eggs, and all conservæ on stems and branches, and the face of the wall. No one need be nervous about using it if care be taken not to exceed the quantities named in the formula given below:—Take 1 lb. caustic soda and 1 lb. crude potash, and either boil altogether, or dissolve by pouring boiling-water over the chemicals; then add sufficient hot-water to make 10 gallons, and use while warm. Apply by means of a sprayer, and wear leather gloves, to prevent the moisture from burning the hands. If boiling-water is poured over the chemicals, instead of boiling them together, the person doing it must be careful not to hold his face over the vessel, as the soda boils violently so soon as the water touches it. No more nails and shreds should be used in fastening the shoots than are necessary, and tarred twine or thin Willows should be used for securing the branches. If the walls are wired, use raffia for all but the oldest branches.

Figs.—In many parts of the country Fig-trees must be protected in the winter, otherwise the embryo fruits, and oftentimes the wood itself, may get killed. My method is to loosen the tree from the wall and tie up the branches in convenient-sized bundles, which are bent down to the ground, and fasten these to nails driven into the wall. Over all some dry bracken or straw is packed, and the whole is covered with mats made secure by nails and shreds. The right time to afford protection is when the foliage has fallen and hard frosts are imminent.

Grease-bands.—This is the proper time to apply grease-bands to Apple and Pear trees, the females of the winter-moth being abroad at about this date. The paper employed should be grease-proof, or the grease will penetrate to the bark and work injury to the trees, more especially if young with tender bark. The bands should be 4 inches wide, and long enough to reach round the tree with a little to spare. Tie them as tightly to the stems as possible, and stop any openings there may be between the bands and bark with cotton-wool. The best kind of grease is that which is sold specially for the purpose. It may be added that it is necessary to renew the grease smear frequently, as it hardens by exposure and gets less effective.

Gooseberry and Currant Cuttings.—When the bushes are pruned, the best of the shoots should be collected for the making of cuttings, taking care to tie them in small bundles, and label them correctly. If not made into cuttings forthwith, lay them by the heels in moist ground for the present. Cuttings put forth roots more freely if made and planted at this season than if left till spring.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Pleiones deserve to be more generally cultivated. If the flowers are next to useless when cut, the plants themselves may be used for table decoration by taking the flowering pseudo-bulbs out of the soil, and placing them in moss. The following species are the best:—*P. ligularia*, *P. Wallichiana*, *P. maculata*, and *P. humilis*. They all shed their leaves before the flowers appear in the young growths. Soon after the flowers have passed, free the pseudo-bulbs from the membranous sheathing, and shake away the old soil from the roots. Prepare a compost of equal parts fibrous loam and peat, and small quantities of chopped sphagnum-moss, sand, and dried pulverised cow-dung. Pans about 4 inches deep, and that afford space for sixteen or twenty pseudo-bulbs, should be three-parts filled with crocks. Cover these with a thin layer of rough sphagnum-moss. Take each pseudo-bulb separately, and with some sphagnum-moss and the old roots, form a little ball, and fix them in the compost, which should be raised considerably above the rim of the pan. So arrange the pseudo-bulbs that each plant will have space for development. The first two species may be placed on a shelf in an intermediate-house, and *P. maculata* in a similar position in a Cattleya-house, this species requiring a higher temperature than the others. *P. humilis* must not be disturbed until it has flowered in March, but it may then be treated as *P. ligularia*.

Do not afford Pleiones any water for about six weeks after they have been potted. They may then be dipped to the rim in tepid rain-water for a minute or so, and no more will be required until another similar period has past. Subsequently, more frequent applications will be necessary, as the roots will have taken good hold of the new material. When the pseudo-bulbs begin to swell, weak liquid-manure may be afforded them, but it must be discontinued when the leaves begin to decay. Pleiones require a moderate amount of light and natural heat, and must not be subjected to deep shade and a close atmosphere, or a high temperature.

Lycastes, Anguloas, &c.—Afford deciduous species, such as *L. aromatica*, *L. cochleata*, *L. consobrina*, &c., a light position in a cool house, and they will need no water so long as they do not shrivel greatly. *L. Skinneri*, *L. plana*, *L. lanipes*, and *L. Deppei*, require a temperature of 55°, as much light as possible, and a very moderate supply of water. *Anguloas* may be treated similarly to *Lycastes*; the less water afforded the plants, so long as the pseudo-bulbs do not shrivel greatly, the better will the plants flower next season. *Acinetes* need to be cultivated in baskets, and suspended in a light part of the warm intermediate-house. Afford them water at long intervals; also *Gongoras* and *Luddemannias*.

Odontoglossum citrosum, having completed its pseudo-bulbs, should be afforded a position near the glass in a house having a temperature of 55° to 60°. Water should be afforded only to prevent excessive shrivelling.

PLANTS UNDER GLASS.

By T. EDWARDS, Plant Foreman, Royal Gardens, Frogmore.

Hardy Plants for Forcing.—Although it will not be necessary to put these into the forcing-house at present, they should be removed now from the nursery ground, and potted up. They will succeed better than they would if left in the ground until they are required. *Lilacs*, *Staphelias*, *Guelde Roses*, shrubby *Spireas*, *Prunus* of sorts, *Cerasus Watereri*, *Deutzias*, and *Ghent and Mollis Azaleas*, are indispensable. Select those plants that are well set with flower-buds, and lift them carefully with a good ball, retaining all the fibrous roots. Pot very firmly, taking care that the soil is worked down to the bottom of the pot with a rammer, and made solid. Loam and leaf-mould will suit most of the plants, but *Azaleas* will need a compost of two parts peat, one of loam, and some sand added. When the plants have been potted, afford them a good watering, and plunge the pots in ashes outside until the plants are required for the forcing-house.

Bouvardias, *Heliotropes*, and *Carnations*, in bud and flower should now be afforded a light, airy house with a night temperature of 50° to 55°, and be supplied with weak manure-water two or three times a week. If *Bouvardias* have been planted-out as I advised in the spring, and they have been properly attended to after potting-up, they will continue to flower all the winter.

Cape Pelargoniums should now be kept comparatively dry and cool, with a circulation of air in the house day and night. *Cyclamens* and *Primulas* and the first batch of *Freesias* require a moderate degree of heat in the pipes to maintain a night temperature of 50°. Ventilate freely when the weather is favourable, and afford them weak guano-water with a dash of soot in it twice a week.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt Tisbury, Gloucestershire.

Treatment of Soils.—Clear the crops from the land as soon as it is possible, that the soil may be prepared for the particular crop it is to be planted with next season. Thorough drainage and deep working are necessary, 2 or more feet being none too much for some vegetables. I know that deep cultivation requires much labour; that the benefit is not clearly seen except in a hot, dry season, when the extra labour expended in winter saves so much watering in summer. In some districts growers have both heavy and light soils for their crops. This is not a disadvantage, as by incorporation with each other they may be made equally productive. Owing to the recent rainfall, operations on heavy soils had better be delayed for a week or ten days; then it should be roughly and deeply turned over, and left in this state for several weeks

exposed to wind and frost. As each layer is thrown up, some road-scrappings, charred soil, and grit, may be thrown on unsparingly; and later in the season manure may be wheeled on to the ground. Bastard-trenching is also equally good, breaking up and loosening the under soil as much as possible, and afterwards adding lighter materials, as well as a suitable quantity of stable-manure. A practice much to be recommended in cold and damp positions is that of making the plots slightly raised above the surrounding level, so that surplus water may drain away.

Broccoli (autumn).—If the grower has to provide heads till the end of the year, there will no doubt be one or two batches later than those plants now affording a supply. At present there is no prospect of severe weather, but should it set in by December the supply would soon be cut off. It will be as well, therefore, to lift some of the smaller headed plants and put them into deep pits, so that they will not touch the glass of the roof. The plants should be lifted with a good ball of earth. If pits are not available for the plants, a good firm bed in a cool shed, although not one of the best positions, is preferable to planting them on borders of Peach-houses or vineries.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of ILCHESTER, Abbotsbury Castle, Dorsetshire.

Evergreen Shrubs growing beneath large Trees.—It is very difficult to keep the turf under the shade of Conifers and other umbrageous trees in good condition, owing to the partial absence of light and the drip in the winter months. Moreover, the ground is hard and dry. In this case, after a copious rainfall place a garden line around the trunk of each tree, doubling and taking to the margin of the bare patch, describe a circle with a pointed stick, and afterwards make a deep cut with a spade or edging implement. Then with digging-forks turn up the soil as deep as the roots allow. Generally little can be done in this way, and compost has to be added, which may consist of road scrapings, rotten manure, leaf-mould, and garden mould. This may be laid on from 1 foot to 2 feet thick. Then, having made it firm, plant any of the following strong-growing Ivies, *Hypericum calycinum*, *Ruscus racemosus*, *R. aculeatus*, *R. hypoglossum*. Ferns if the soil be peaty—*Scolopendrium vulgare*, *Aspidium aculeatum* and vars., *Cyrtomium falcatum*, *Ulex europæus*, *U. fl.-pl.*, *U. nana*, *Rosa multiflora*, and *R. Wichuriana*. These should have special holes made for them on the outside and be trained towards the trees. *Vincas*, *Euonymus japonica* in variety, *Berberis stenophylla*, *B. Darwini*, *Gaultheria Shallon*, *G. procumbens*, *Vaccinium Vitis Idæa*, *Jasminum nudiflorum*, *Liberia formosa*, *L. ixioideis*, *Muhlenbeckia complexa*. Amongst these, according to fancy, there may be employed *Narcissus*, *Lilies*, *Schizostilis coccinea*, *Crocus*, *Lily of the Valley*, *Iris germanica*, *English Iris*, *Petasites*, *Megaseas*, *Helleborus* of species, *Colchicums*, *Cyclamens* of the hardier species, *Hemerocallis*, *Honesty*, &c. The flowering subjects should be planted mostly near the margins, where the light is more abundant than towards the centre of the patches.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of PORTLAND, Welbeck Abbey, Worksop.

Pine-apples.—For the period ending with the month of January the heat derived from hot-water pipes should be reduced for all succession Pines, *Cayennes* or other varieties with swelling fruit being excepted. These should have an uniform moist atmosphere, but overhead syringing should now cease. Keep the soil in a steadily moist state, and apply liquid-manure at each application of water. A night temperature of 70°, and 75° to 80° by day, with bottom-heat of 85°, should be afforded. Succession plants, and those intended for fruiting early next year, may be afforded a temperature of 60° to 65° by day, fresh air when the warmth in the house goes above 65°, and avoid a stagnant atmosphere. The bottom-heat may range from 75° to 80°, and water only be applied when the soil has got dry. Suckers potted at a late part of the season should be kept growing till rooted, when a slight rest should be afforded before starting them into active growth next spring. Houses and pits of no great height are economically managed if a

covering be put on the roof at night, thereby reducing the need of much artificial heat in cold weather. Collect and store a large quantity of Oak or Chestnut leaves for making hot-beds, packing them away in a dry place, or covering them to keep off the rain and snow if they are stacked in the open air.

Cucumbers.—Plants raised in August will be in free bearing; the Cucumbers should be reduced to moderate numbers, in order to prevent the exhaustion of the plants. Much heat is necessary at this season to ensure shapely fruits. A temperature at night of 65°, and by day of 70° to 75° should be maintained, with an advance of 10° when there is sunshine. Let the hot-water pipes be occasionally smeared with flowers-of-sulphur. Let the growths be kept thin, and endeavour to secure good substance in the foliage, and spent foliage should be removed at intervals. The Cucumber-house should be damped down several times a day. Apply slight top-dressings of turfy-loam and leaf-mould, or half-decayed horse-dung. Water at the root will not be required more frequently than twice a week at the utmost, as too much is very injurious to the health of the plant.

THE APIARY.

By EXPERT.

Marketing Sections.—A good many complaints reach me in regard to the condition in which sections arrive at their destination. Taking first of all the fact that wholesale houses do not want to be bothered with honey arriving in such condition, and that the sections that are good are spoilt by the honey running over them, and those that are saleable have to be cleaned, and that this means a good deal of time, besides expense. Secondly, some railway companies refuse to take comb-honey excepting at the sender's risk, so that bee-keepers will do well to study the best and safest mode of getting sections to their destination in good condition; otherwise it will be a total loss. Sections in numbers from 6, 12, 18, to 24 can be sent safely in crates with springs; but when larger quantities have to be sent, some other method has to be found; and a safe and good one may be contrived out of a cube sugar-box. Let the two opposite sides at the top be opened out a little, and two strips of wood nailed on outside, so as to keep the box from closing. This will make a crate of it, which will be like a super-crate, and capable of holding two dozen sections, with two fillets fastened on each end to enable these to be lowered into it. Place several pieces of newspaper over each crate, to prevent the honey gaining access to other crates. In case of an accident, and pack all firmly at the sides. Each box will hold three crates, each containing twenty-four sections, so that you can reckon up very easily, viz., each box holds half-a-gross. Have a lid made to fit, and print on it with ink or paint—"Comb-honey, with care." The bottom of the box should be padded with hay or shavings, to prevent any sagging. Pad the box at the sides and ends about 6 inches up, and make two holes in each end, to enable handles of strong rope to be attached. These cases are well made, and perfectly safe for the transit of comb-honey. Have all crates numbered, commencing No. 1, and the cases numbered as well; you then have No. 1 case and three crates inside, all furnished with numbers, which will prevent confusion in the case of things getting mixed.

The Hives.—All bees should now be fed-up, and care taken that all entrances are reduced in size, in order to prevent robbing, and to keep out mice. A sharp look-out should be kept that any driven bees, united with an old stock, are absolutely free from any disease, and a little naphthaline should be placed in each hive.

PUBLICATIONS RECEIVED.—*Two Diseases of Red Cedar caused by Polyporus juniperinus and Polyporus carneus*: a preliminary report, by Hermann von Sohrank. A description of the fungi and of their mode of growth is given. As the spores enter exposed places in the heart-wood, the treatment must be preventive, not curative; all diseased trees should be destroyed.—*Journal of the Department of Agriculture of Western Australia*: a grass, *Lappago racemosa*, is noted as mischievous on account of its burrs or floral envelopes, which adhere to the fleeces of the sheep and deteriorates the wool.—*Bulletin of the Botanical Department, Jamaica*, October. This contains papers on: Moth Borer in Sugar Cane, by H. Maxwell-Lefroy; *Andropogons* in Jamaica, by Wm. Harris; *Kola Nut*; *Seedling Canes*; and *Evaporation of Water through Plants*.—*Annales Agronomiques*, October 25. This includes the continuation of an article by M. D. Zolla on: *La baisse des prix et la crise Agricole*.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	Nov. 13	Chester Paxton Chrysanthemum Show (2 days), Belfast Chrysanthemum Exhibition (2 days), Highgate Chrysanthemum Show (2 days), Leeds Paxton Chrysanthemum Show (2 days), Folkestone Chrysanthemum and Fruit Show (2 days), Devizes Chrysanthemum Show, Winchester Chrysanthemum Show, Longton (Staffs.) Chrysanthemum Show (2 days).
		Hull and East Riding Chrysanthemum Society's Show (2 days), York Florists' Chrysanthemum Show (3 days), Evesham Chrysanthemum Show, Buxton Chrysanthemum Show, King's Lynn Chrysanthemum Show (2 days).
WEDNESDAY,	Nov. 14	Vegetable and Farm Root Show at Messrs. Harrison & Sons', Leicester.
THURSDAY,	Nov. 15	Scottish Horticultural Society's Chrysanthemum Show, Edinburgh (3 days), Manchester Royal Botanic Society's Chrysanthemum Show, Parkstone Chrysanthemum Show (2 days).
FRIDAY,	Nov. 16	Bolton Horticultural Society's Chrysanthemum Show (2 days), Bradford Chrysanthemum Show (2 days), Macclesfield Chrysanthemum Society's Show (2 days).
SATURDAY,	Nov. 17	Brookburn Horticultural Society's Chrysanthemum Show (2 days), Middleton Chrysanthemum Society's Show (2 days).

SALES.

- MONDAY, Nov. 12.—Dutch Bulbs, at Protheroe & Morris' Rooms.—Dutch Bulbs, Plants, &c., at Stevens' Rooms.
- TUESDAY, Nov. 13.—Dutch Bulbs, at Protheroe & Morris' Rooms.—Highly Important Sale of Orchids at Ashford, Wiltshire, Cheshire, by order of G. Shorland Ball, Esq., by Protheroe & Morris (two days).
- WEDNESDAY, Nov. 14.—Dutch Bulbs, at Protheroe & Morris' Rooms.—Sale of Nursery Stock on The Nurseries, Horsell Birch, Horsell, near Woking, by Protheroe & Morris.—An Importation of *Lilium auratum*, *S. rubrum*, *S. album*, *Lily-of-the-Valley* Crowns, Roses, Fruit trees, Shrubs, &c., at Stevens' Rooms.
- THURSDAY, Nov. 15.—Dutch Bulbs at Protheroe & Morris' Rooms.—An Importation of Orchids, Dutch Bulbs, Plants, &c., at Stevens' Rooms.
- FRIDAY, Nov. 16.—Dutch Bulbs at Protheroe & Morris' Rooms.—Sale of Orchids, by order of Messrs. Sander & Co., by Protheroe & Morris.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—42° 3'.

ACTUAL TEMPERATURES:—

LONDON.—November 7 (6 P.M.): Max. 55°; Min. 48°.

November 8—Fine; mild.

PROVINCES.—November 7 (6 P.M.): Max 56°, S.E. Counties; Min. 46°, W. Ireland.

WHILST the many have been this week admiring and wondering at the magnificent display of Chrysanthemums at the Aquarium, Westminster, and at other exhibitions, a smaller number of equally appreciative plant-lovers have been delighted by the sight of the smallest and most inconspicuous of Chrysanthemums! This was no less than a specimen of the wild form from the far interior of China, whence it was communicated to the Royal Gardens, Kew, by Mr. GRANT BIRCH. We had already figured this plant as sent home in the dried state by Dr. HENRY, and now repeat it for the benefit of those who may not previously have seen it (fig. 106, p. 342). The flower-heads in the plant shown at the Drill Hall, and at the Aquarium, are little more than half-an-inch across, and of a pure yellow colour. As shown all the shoots bore "terminal" buds, and none of the lateral

and axillary buds had been thinned out. This reference to buds leads us to call attention to the valuable contribution to our knowledge of vegetable physiology that Chrysanthemum-raisers have made.

Botanists do not fully appreciate the great diversity in the position and nature of the buds, and of the great differences that arise from the "taking" or selecting the bud at this or at that time. The variety and splendour of our modern Chrysanthemums are largely due to the disbudbing at a particular time, that time being often different in different cases, and having to be discovered by experiment. Most cultivators of Chrysanthemums for exhibition keep a Chrysanthemum "time" list, and upon this are entered the names of all the varieties they cultivate for that purpose. Against the name of each variety is set down the best time for striking the cutting, also for stopping the shoots when this is necessary, and for "taking" the bud, whether "crown" or "terminal." This information may have been obtained by experiment on the part of the grower himself, or it may have been communicated to him by other enthusiasts who were first successful with the particular variety. But this knowledge is first gained by experiment by some one or other, and until it has been obtained, a variety is cultivated with indifferent success at the most. Some varieties need to be stopped once, others twice, and many not at all. Some flowers are so rough and unattractive when developed from a "crown" bud, as to be next to useless; others, again, if they be left to the terminal bud, lack the size and grandeur requisite to win honourable places at an exhibition. The difference between the two buds is largely the difference between a natural flower and an artificial one. In Nature, the "crown" bud would not produce a flower at all, but be abortive, and the plant would continue to grow beyond it. The "terminal" bud is the natural limit of growth, and would therefore be a flower-bud under any conditions. The terminal bud is thus produced when the plant has become more fully matured, and as a consequence the flower obtained from it has richer colour and greater refinement. On the contrary, by selecting a crown-bud whilst the plant is still making rapid growth, and by denuding the plant of all possibilities of making that growth, energy is diverted to the flower-bud that would otherwise have produced shoots and foliage, and therefore the bloom will have extra size. The cultivator needs to encourage size in some varieties, but extra refinement and colour in others; or he may need to hurry the flowering period of one variety, and delay it in the case of another. It is these considerations that guide the cultivator in his selection or "taking" of buds. And the result of all this work and skill is, that such flowers are obtained as were seen at the National Chrysanthemum Society's annual exhibition at the Royal Aquarium, Westminster, during the past week.

That exhibition seemed to prove that Chrysanthemums have still as great an interest as exhibition flowers as ever they had. This may be said even in respect to the Chinese type, or the truly incurved flowers, which for some years past have been shown in less good condition than had used to be the case. At the recent exhibition, however, the incurved flowers from Fetcham Park were of capital quality, and reference to our report on p. 343, will show that there were not lacking exhibitors in these classes.

But at the same time, the Japanese type is

still most popular, and there were some grand flowers at the exhibition. The largest and best were those exhibited by Mr. VALLIS in the class for sixty Japanese blooms, exhibited in twelve vases, five blooms of one variety in each. It is not too much to say that never have such magnificent Japanese blooms been exhibited in this country as were those sixty specimens collectively. The varieties Calvat 1899, Le Grand Dragon, M. Chenon de Leché, Edwin Molyneux, and Nellie Pockett, were particularly good. There were nine exhibitors in the class, and they staged 540 large blooms; Mr. VALLIS winning the Society's Gold Medal and the £20 offered by Mr. H. J. JONES. Excepting the 2nd prize exhibit, which was one from Mrs. TAIT, Leatherhead (gr., Mr. MEASE), the vases were arranged in a double row upon tables, but the effect of the blooms would be much better if they were placed in single row only, and for this purpose the tables might be narrower, so that but little more space would be necessary.

It is a pity that the Chrysanthemum foliage will not last good longer than it does. On the second day of the show, the handsome leaves that when fresh proved so excellent a relief to the blooms in the vases, were hanging about the stems, and the effect suffered considerably. The 1st prize for forty-eight Japanese blooms, shown on the ordinary boards, was also won by Mr. VALLIS, who has only been growing Chrysanthemums for exhibition for the past four years. How has he managed to excel so veteran a cultivator as Mr. MEASE?

The minor types of the flower, such as Pompons, Anemones, singles, &c., were shown in about the usual quantity, and though they were in every way interesting and satisfactory, there is little new to say about them.

The trained specimen plants seem to be going. There were certainly fewer at this show than has been usual, and possibly there will be little regret felt at this, although they were admirable instances of skilful training.

There was no class for the old circular groups of plants, that have been shown so often heretofore, and the exhibits, in the substituted class, for which the President's prize was offered, had more interest in them.

In respect to new varieties, there is increasing evidence that the English raisers are little, if at all, behind our continental colleagues, whilst the magnificent seedlings that have been obtained from Australia are worthy every praise. The colonial contingent is becoming a most important one. It is gratifying to see how certain varieties have exceeded what was anticipated of them, but others are for the moment less valuable than they were expected to prove. Among the very finest Japanese blooms we have seen are M. Chenon de Leché, Calvat 1899, and Lord Ludlow. But there are many varieties like Lord Ludlow, which Mr. WELLS says can be grown to perfection only by one system, and another season many varieties may be shown better than they have been as yet. Again it is a question of "stopping" of shoots and "taking" of buds, and only in a minor degree a question of manure.

ROSE SOUVENIR DE PIERRE NOTTING.—In alluding to the nursery of MM. SOUPERT & NOTTING, at Luxemburg, in a recent issue, we had occasion to mention a new Tea Rose which that firm is about to distribute (see *ante*, p. 271, fig. 80). Our illustration (see Supplement) shows a portion of the nursery devoted to the cultivation of this free-flowering and beautiful Rose, a cross, as it is said, between Maréchal Niel and Maman Cochet.

LINNEAN SOCIETY.—On the occasion of the meeting on Thursday, November 15, at 8 P.M., the following papers will be read:—1, "Contributions to the Comparative Anatomy of the Cycadaceæ," by Mr. W. C. Worsdell, F.L.S., &c.; 2, "On a New Parasitic Copepod," by Miss Alice L. Embleton, B.Sc.

"BOTANICAL MAGAZINE."—The plants figured in the October number are:—

Michauxia Tchikatcheffi, tab. 7742.—A noble annual or biennial, 5 feet to 6 feet in height, with linear-oblong, lobed, hispid leaves, and numerous white Campanula-like flowers in dense erect spikes. Native of the Cilician Taurus.

Erigeron leiomerus (A. Gray), tab. 7743.—A low-growing perennial, with small linear leaves and stalks bearing solitary flower-heads with violet rays and yellow disc florets. It is a native of the mountains of Colorado, and would be suitable as a rock plant.

Potho Loureiri, Hooker & Arnott.—A climbing Arad, native of China and Tonkin. The leaf-stalks are dilated and leafy, 3 to 4 inches long, scarcely $\frac{1}{2}$ -inch wide; blade articulate, shorter than the stalks spikes slender, deflexed, with numerous red berries, the size and shape of small Olives; t. 7744.

Dendrobium inaequale, Rolfe.—Pseudo-bulbs dimorphous, the smaller ones ovoid costate, the upper linear oblong, clavate; leaves oblong acute; flowers greenish, $1\frac{1}{2}$ inch; sepals and petals sub-equal. Lip shorter than the sepals, lateral lobes convolute, pale yellow, streaked with purple; t. 7745.

Cypripedium guttatum.—Leaves broadly ovate, acute, plicate, softly pubescent; peduncles one-flowered; flowers $1\frac{1}{2}$ inch in long diameter. Upper sepal white with pink spots, lateral petals oblong, slightly deflexed; lip pouch-shaped, all white with pink spots. The species extends from Central Russia, Northern Asia, Kamtschatka, Manchuria, Northern China, the Aleutian Islands, Alaska, and the Mackenzie River. It has recently been discovered in Tibet; t. 7746.

PRESENTATION.—At Mill Hill, N.W., on October 21, Mr. W. STURT, of Wentworth House gardens, was presented by the rector of the parish, on behalf of many friends, with a set of silver-plated forks and spoons upon his leaving the district.

THE CURRANT-BUD MITE.—Mr. NEWSTEAD'S lecture before the Royal Horticultural Society on Tuesday last, though one of much interest, was, in one sense unsatisfactory, in that it was a record of failure as regards the experiments that have been made to destroy the pest. Possibly the study of the mite which produces similar swellings on the Hazel would furnish a clue which might be serviceable in the case of the Black Currant. Mite-infested Hazels and Filberts are not uncommon, but the results of the pest are apparently not serious.

NORTHAMPTON NURSERYMEN MADE TOWN COUNCILLORS.—It is with pleasure that we notice that Mr. FRED PERKINS and Mr. JOHN PERKINS, of one of the principal firms of nurserymen and florists in Northampton (Messrs. THOMAS PERKINS & SONS) have been elected to the Northampton Town Council. The Council has recently assumed greater importance by reason of the fact that an increased membership, representing a population of about 100,000, has been brought about by the extension of the borough boundaries, owing to the energy displayed by both gentlemen.

SWEET PEA MONT BLANC.—M. ERNST BENARY offers this as the earliest white. In form the flower resembles Emily Henderson. Seeds of this variety were sown on April 5; the first flower was produced on June 13, and the plant was noted as being in full bloom on June 22, an average of

about a fortnight in advance of other varieties. Sown under glass on February 20, Mont Blanc produced its first flowers on May 1.

JUDGING ROSES.—The American Rose Society, of which our old friend Mr. LEONARD BARRON is Secretary, has adopted the following scale of points:—

Size	...	...	...	...	...	15
Colour	...	...	...	...	...	20
Stem	...	...	...	...	...	20
Form	...	...	...	...	...	15
Substance	...	...	...	...	...	15
Foliage	...	...	...	...	...	15
Total	...	...	...	...	...	100

It will be noted that fragrance is omitted; it is, however, included, but only to a small degree, under the head of novelties entered for certificate, thus:—

Size	...	...	...	...	...	10
Colour	...	...	...	...	...	20
Stem	...	...	...	...	...	15
Form	...	...	...	...	...	15
Substance	...	...	...	...	...	10
Foliage	...	...	...	...	...	15
Fragrance	...	...	...	...	...	5
Distinctiveness	...	...	...	...	...	10
Total	...	...	...	...	...	100

The relatively little importance assigned to fragrance is very remarkable. Next to form we should consider it of greatest consequence.

ORCHARDS AND SMALL FRUIT.—According to the Agricultural Returns published by the Board of Agriculture, the total number of acres utilised in England as orchards in 1900 is 226,164; small fruits occupy 66,749 acres. Of counties with more than 20,000 acres of orchards are Devonshire, Gloucestershire, Herefordshire, Kent, and Somerset. For small fruit Kent, with 22,466 acres, is very far in advance of any other county, though as to orchards it is surpassed by Devonshire with 27,240 acres, Hereford 26,847, Kent having 26,340 acres.

ROYAL BOTANIC SOCIETY OF LONDON.—Lectures:—A course of four lectures on "First Principles of Colonisation and Plantation" have been arranged to take place in the gardens of the Society in Regent's Park on Friday afternoons, November 16, 23, 30, and December 7, at 3 o'clock. The lecturer is Mr. R. HEDGER-WALLACE, late of the Department of Agriculture, Victoria. The chair will be taken on November 16 by Lieut.-General Sir ANDREW CLARK, G.C.M.G., Agent-General for Victoria. Tickets to admit to the course can be obtained of the secretary at the gardens.

THE WEATHER IN WEST HERTS.

A WARM, wet, calm, and gloomy week. The days were, on an average, about 5° warmer, and the nights about 11° warmer than is seasonable. On one day the shade temperature rose to 64°. Had this day been the first in November instead of the last in October, it would have been the warmest November day I have yet recorded here. On the warmest night the exposed thermometer did not fall below 50°, which is an even more exceptional reading for the time of year. Notwithstanding the paucity of sunshine, the ground is now about 4° warmer than the average, both at 1 foot and 2 feet deep. Some rain fell on each day, but the total measurement was only about half an inch. Since the present spell of wet weather set in, six gallons of rain-water have come through the bare soil percolation gauge, but none as yet through that covered with short grass. Both gauges are a yard square. Five days were absolutely sunless, and on the remaining two days the sun shone for altogether only $3\frac{1}{2}$ hours. The atmosphere has been persistently damp and calm; in fact, on several days, even early in the afternoon, the air was nearly at the point of complete saturation.

OCTOBER.

This was an extremely changeable month as regards temperature, no fewer than six changes from warm to cold or from cold to warm taking

place during the course of it. Regarded as a whole, it was a decidedly genial October. On two days the shade temperature rose above 70°, and at no time did the thermometer exposed on the lawn show more than 6° of frost, an exceptionally high extreme minimum reading for the month. Rain fell on seventeen days to the aggregate depth of about 2½ inches, which is about $\frac{1}{3}$ -inch below the October average—equivalent to the loss of nearly 4 gallons of rain on each square yard of surface. The distribution of the rainfall was peculiar, as more than three-fifths of the total quantity was deposited during the last week. October is usually the wettest month in the year, but the last four Octobers have been all more or less dry. The sun shone on an average for half an hour a day longer than is usual in October; this excess was entirely due to the sunny character of the first fortnight, for after this there occurred a good many dull days. The past month proved the windiest October for nine years, and for 600 hours, or as many as twenty-five days, the direction of the wind was some point in the western half of the compass. The atmosphere was, on the whole, rather dry for the time of year. E. M., Berkhamsted, Nov. 6, 1900.

HOME CORRESPONDENCE.

SESSILE AND PEDUNCULATE OAKS.—In reference to the above, probably the following observations, made in East Berks, may be of interest to Mr. W. R. Fisher. The sessile and pedunculate Oaks are to be seen growing side by side in this locality, but only in situations that are neither wet nor yet dry in the extreme. A few paces from my house there are three Oak-trees within a few feet of one another; two are *Q. pedunculata*, and the other *Q. sessiliflora*. Growing by the roadside, and at the top of a short hill with a fall of 1 foot in 15 feet, and in a very sandy soil, on gravel subsoil, the situation must strike one as being rather dry. Here the sessile form is apparently at home, for its topmost branches reach to a height of 35 to 40 feet, and its trunk measures 5 feet in circumference at 1 foot from its base, while its pedunculate companions are not more than two-thirds its height, with the same circumference, but with naturally a wider spread of branches. On another part of this estate, where trees of *Quercus pedunculata* are growing by themselves, the soil is moist, and in some cases quite spongy; but wherever a clump of Oaks is found in a dry situation, *Q. sessiliflora* is among their number, and in most instances is the superior tree. The southern side of this place is the driest, and there are to be seen Scots Pines, *Pinus sylvestris*, in thousands; and where these Pines grow luxuriantly, as they do here, one can be sure of finding a dry soil. It is on the outskirts of these Pine-woods that one gets a very good illustration of what an Oak can contend with. Here is a sorry specimen of *Q. pedunculata*, whose crown does not measure more than 10 feet either way, with a twisted and cankered trunk, distorted and lichen-covered branches; it looks a veritable patriarch, and serves to illustrate what a struggle for existence in the vegetable world really means. *Q. sessiliflora* is here also, but does not look really at home, as it does in a less dry situation. The points illustrated show clearly that here the pedunculate grows well in a moist soil, fairly well in a medium moist soil, and merely lingers in a dry one. While on the other hand, *Q. sessiliflora* does not appear where moisture abounds, grows well where the soil is neither wet nor dry, and only fair where the soil is dry. If I have missed any points of interest to Mr. W. R. Fisher, I shall be happy to answer any question as to this locality, soil, rainfall, and average temperatures. D. W. Simmons, The Gardens, Heathlands, Wokingham.

—The long correspondence which has appeared in your columns relative to the merits of the durmast or sessile-flowered Oak compared with those of the pedunculate species or sub-species, will probably leave most people of the same mind as they were when it began. Nevertheless, the impossibility of getting the durmast Oak from any nurseryman of my acquaintance is such a serious matter for planters in the northern part of the kingdom, that I venture to trouble you with the results of my

observation, in the hope that, during this abundant season of acorns means may be taken to supply the market once more with this most valuable tree. In appearance, beauty of foliage, and cleanness of trunk and limb, *Quercus sessiliflora* seems to me to be an Oak incomparably finer than *Q. pedunculata*. That, however, is a matter of taste. What is important is the fact that the durmast will thrive and ripen its season's growth in moist northern and western latitudes, which are unfavourable to the development of the pedunculate kind. In our salt-laden atmosphere upon the western seaboard, much of the growth made by the pedunculate Oak during one season fails to ripen before it is nipped by frost; the tree is much more subject than is the durmast to galls—a sure sign of debility, and it never carries with it the wealth of glossy foliage which distinguishes its congener. Whence, then, it may be asked, arose the preference for the pedunculate form, shown by the absence of the sessile form from the trade lists? Chiefly, I believe, because of the recommendation bestowed upon the pedunculate or "English" Oak by such practical, but in this respect prejudiced writers as Messrs. Brown and Michie. At their door must be laid the incalculable harm wrought of late years in Scottish woodlands by planting the pedunculate instead of the sessile Oak—the latter being indigenous, and best suited to northern districts. Not that the durmast Oak is an exclusively northern form. By no means. I would refer your readers to the splendid Oak timber in Merivale Park, Warwickshire, part of the ancient Forest of Arden. All the old Oaks there are of the sessile-flowered form, and I have never seen finer, loftier boles. But gaps made by the wind have been replaced of late years with pedunculate saplings. In Knole Park, Kent, on the other hand, the general growth is pedunculate; but there is a magnificent avenue of durmast leading to the house from the direction of Wildernesee, and these tower far and straight above the gauged and twisted veterans in the rest of the park. It has been remarked that there are many intermediate varieties or hybrids between these two putative species. So there are, notably in parts of Westmoreland and Tweeddale; and some of these are quite as satisfactory and superior in constitution to the pedunculate Oak as is the pure durmast. A cross of blood with the durmast seems to impart to the pedunculate Oak precisely those qualities which are best adapted for Scottish planting, although none of the hybrids or intermediate forms which I have yet seen rival the pure durmast in beauty. Both Mr. Brown and Mr. Michie, if I remember rightly, state that the timber of these varieties is of equal value, and commands the same price in the market. *Herbert Maxwell, Monreith, Nov. 2, 1900.*

"TRANSPARENT" FRUITS (see "Enquiry," ante, p. 331).—There can be no doubt but that the descriptive term "transparent" applied to fruits, must be taken in a very qualified sense. The most transparent of all fruits probably is the White Transparent Currant, as in these the seeds are very visible through the skin and pulp. There is the Transparent Gage Plum, which is so only in name, although the skin is delicately tinted. There are also so-called transparent Apples, notably, White Transparent, or White Astrachan, the flesh of which is described as semi-transparent, no doubt because it is a light, thin, white flesh; and Transparent Codlin, the flesh of which is described as almost transparent. When, however, Court of Wick, a very solid, firm-fleshed Apple, has also been termed Transparent Pippin, it seems evident that the term transparent has a wide meaning. Certainly, whether applied to Crabs, Apples, or Plums, it seems to be a foolish one, as transparency does not exist in them. *A. D.*

GRAPE DIAMOND JUBILEE.—Permit me to offer a strong protest against the method of your correspondent, David Airdrie, who probably writes from a treacherous memory, and not with my note on "New Grapes," p. 210, before him. He charges me with having said that Diamond Jubilee was nothing else than Black Morocco. I said, and quoted from the *Royal Horticultural Society's Journal*, "that when Diamond Jubilee was presented to the Fruit Committee on September 26, 1899, it was regarded as too closely resembling Black Morocco to be distinguishable from that variety." In that estimate was joined the opinion of Mr. Barron, the greatest Grape authority of to-day. If under some miserable and untrue plea,

that the Grape may not have justice done to it if sent to Chiswick for trial with Black Morocco, no such proposal is accepted, the responsibility of such course will not rest with the Royal Horticultural Society, and we may draw deductions. *A. D.*

—Mr. D. Airdrie (see p. 330 of the *Gardeners' Chronicle*) need not take "A. D.'s" criticism of this variety of Grape very seriously, as it is quite distinct from Black Morocco, which is sometimes named Kempsey Alicante. Many years ago, when I grew Black Morocco, I found it a bad setter, often having small berries. A special feature is a greenish or purplish colour round the stalks of the berries; and again, a marked feature between Diamond Jubilee and Black Morocco is the colour of leaves, which, when dying off, are of a very pale colour in the case of the latter,

the bunches that were shown on that occasion. Admitting that each member of that Committee is an expert in matters relating to fruit, there yet remains the possibility that among those present there were some who cannot claim an intimate acquaintance with the variety in question. Not many young gardeners have any acquaintance of Black Morocco, in so few gardens is it now grown. I should not be surprised if the decision of the Royal Horticultural Society's Fruit Committee should give a flip to the demand for this old variety, but it is to be hoped that if such a demand arise, there will be no substitutes sent out, and in that way mislead the cultivator. Its acceptance at Shrewsbury, and the favourable reports made by some of the leading Grape-growers who have tested it, would imply that its merits are undoubted. A trial at Chiswick of this and other new



FIG. 106.—*CHRYSANTHEMUM INDICUM*: COLOUR OF FLOWERS YELLOW.

(The original type from which the Florists' Chrysanthemums have been obtained; now blooming at Kew for the first time in Europe. See p. 340.)

and a beautiful red in that of the former—at the least my Vine, which I had from Buchanan Bros., does. No one who has seen the bunches of Diamond Jubilee at Kippen would take it to be Black Morocco. However, as your correspondent "A. D." knows the Morocco so well, let him send a bunch to the Edinburgh Chrysanthemum show on November 15, and probably Messrs. Buchanan will, if asked, send Diamond Jubilee for comparison, and I can assure "A. D." the judges will give a trustworthy verdict. *J. Hamilton, Mandarston, Duns.*

—Much disappointment must have been felt by all who are interested in the new Grape Diamond Jubilee, when seventeen members of the Fruit Committee of the Royal Horticultural Society asserted that it so closely resembled Black Morocco as to be indistinguishable from it. It is doubtful whether a fair comparison could be drawn of a variety so little known and cultivated from

varieties of Grapes, as suggested by "A. D.," would be decidedly interesting, but at the same time it is too slow a process to apply in making Awards. It is many years ago since Venn's Seedling—*syns.*, Black Muscat of Alexandria, Snow's Muscat Hamburg, &c.—was sent out. It created as much interest as the present novelty. The raiser refused a substantial offer, made him by a leading nurseryman, for his stock, so favourable was the impression made by the bunches staged. But on trial in gardens it was found of delicate constitution, and the berries very liable to shanking. Even the raiser himself, who had erected special vineries for its growth, gave up its cultivation. Lady Hoskins, if I remember rightly, is another "break" or "sport" from the Black Muscat of Alexandria, showing how sportive is this variety. A similar incident has occurred this summer in a garden near the town of Trowbridge, Wiltshire. In this case, however, though possibly an "eye" or two may be grown to prove whether

its sportive nature is likely to be maintained, no further trouble will be taken with it. That this Vine has distinctly sported, in so far as the flavour of the fruit is concerned, I have had ample proof; but whether these differences will be fixed is unknown. *W. S.*

I have no wish to interpose between "A. D." and his Scottish friends, as to either the merits or identity of Grape "Diamond Jubilee"; my only desire is to ask both parties to the dispute, when mentioning the Royal Horticultural Society in the matter, to be so kind as to adhere exactly to the words used in the Society's Official Report (see *Royal Horticultural Society's Journal*, vol. xxiii., p. clxiv.), and not to import their own interpretation thereof, and quote it as official. The Committee carefully refrained from expressing any opinion for or against the identity of "Diamond Jubilee" and "Black Morocco"; they contented themselves with all that concerned them, namely, a statement of their very great similarity. For example:—It is very well known to all fruit growers that there are scattered up and down the country a large number of Apples which have been raised from pips of "Blenheim Orange."

present issue we give illustrations of two varieties raised at Newton St. Loe, viz., "Marchioness of Bath" (fig. 107), with paper-white flowers, and "Dorothy Hardwick" (fig. 108), with delicate shell pink coloured flowers.

Obituary.

JOHN HARPER, KIRKCONNELL.—There died on October 30, much regretted by all who knew him, Mr. John Harper, the gardener to Lieut.-Col. J. M. Wilham, at Kirkconnell, Kirkcudbrightshire. Mr. Harper came from Ayrshire, where he was for a number of years in charge of the gardens of Annick Lodge, near Irvine. There he did excellent work, these gardens being well known at that time for their high state of keeping. On reductions being made in the staff there, Mr. Harper felt that he could not keep the place in thorough order, and resigned his appointment, soon afterwards obtaining a similar situation in the employment of the late Mr. Maxwell-Witham, of Kirkconnell. Under his care the old-fashioned garden was much improved

years. He will be best remembered by Orchid-growers in his capacity of head gardener to Holbrook Gaskell, Esq., of Woolton, Liverpool, for several years; subsequently he became head gardener to Henry Fisher, Esq., Moxhull Hall, Warwickshire; latterly in a similar capacity to John Corbett, Esq., Impney Hall, Droitwich, also for some years. He was a man of rare ability, and probably had few equals in his station of life in horticultural knowledge. He was very well read and informed, and the craft has lost an enthusiastic cultivator.

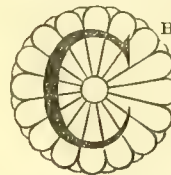
CHARLES HONESS.—We regret to announce the death of Mr. C. Honess, who for fifteen years past has been head gardener to Charles Combe, Esq., Cobham Park, Surrey. Mr. Honess was in his sixty-first year, and previous to going to Cobham Park was gardener for ten years to S. B. Boulton, Esq., Copped Hall, Totteridge, Hertfordshire. Deceased, who had been ill for two months past, died on Monday morning, November 5, and leaves a widow and several children now grown up. He will be succeeded at Cobham Park Gardens by his son, William H. Honess, who has held a position in Welbeck Abbey Gardens for seven or eight years.

MRS. LAING.—We regret to hear of the sudden death, on the 7th inst., of the widow of John Laing, who thus survived her husband only a few weeks.

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

November 6, 7, and 8.



CHRYSANTHEMUMS are again filling our conservatories and dwelling-rooms with their welcome blossoms, their mid-season being marked by the annual exhibition of the National Chrysanthemum Society, which took place at the Royal Aquarium, Westminster, on the dates given above.

This display was as great a success as ever from the exhibition point of view, but possibly the Aquarium authorities might be able to show that there was not the "rush" of visitors to the event that there has been in some years. But if this be so, it should be remembered that for each one collection of Chrysanthemums there used to be on view to the public, there are now twenty, and such different circumstances might be expected to produce such a result. In any case, the exhibition was well patronised, and whilst the Japanese were probably as good as ever, the Incurveds were of better quality than they have been for some years. The "Vase" class was again the greatest success.

The representatives of the Press would have been pleased if the classes had been arranged in something like consecutive order; their labours would then have been lessened by one half. Below is a detailed report of most of the classes, and some further remarks may be found on p. 340.

CONTEST OF AFFILIATED SOCIETIES.

The first-class is one reserved for horticultural societies affiliated with the National Chrysanthemum Society. Each competing Society is required to stage a collection of forty-eight blooms, which must include twenty-four incurveds distinct, and twenty-four Japanese distinct. The blooms may be contributed by one or more members of the Society exhibiting. The 1st prize consists of a Challenge Trophy and £10, 2nd prize £6, and 3rd prize £4. The 1st prize on this occasion was won by the PORTSMOUTH AND DISTRICT HORTICULTURAL SOCIETY, who staged a collection of blooms of unusual merit, and they were contributed by two members of the Society only, Mr. J. AGATE, and Mr. C. PENFOLD. Of incurveds, we noticed excellent specimens of Duchess of Fife, Chas. H. Curtis, Lady Isabel, Nellie Threlfall, Miss M. A. Haggas, Golden Gem, Ernest Cannell, Emile Nonin, &c., and the general quality of the others was good. Among the Japanese blooms were prominent specimens of Florence Molyneux, Mrs. Mease, Nellie Pockett, Soleil d'Octobre, Miss E. Weller (with extraordinary colour, a variety cultivators may be recommended to note, colour rosy-crimson, silver, and buff), M. Chenon de Leché, Australie, Yellow Carnot, General Buller, Madame Carnot, Mons. Hoste, Harold Pink, Edwin Molyneux, Mrs. G. Carpenter, &c. The WINCHESTER HORTICULTURAL SOCIETY showed well for 2nd place, and included some excellent blooms of the Japanese and incurved sections in their collection. The 3rd prize went to the SEVENOAKS AND WEST KENT CHRYSANTHEMUM SOCIETY, who also acquitted itself creditably.



FIG. 107.—DOUBLE-FLOWERED BEGONIA "MARCHIONESS OF BATH":
COLOUR PAPER-WHITE.

BEGONIAS.

THIS week we are celebrating the deeds of the Chrysanthemum raisers, and marvelling over the "evolution" that has taken place from the wild species, as shown in fig. 106, p. 342. Equally, or in a botanical sense, more remarkable are the changes that have taken place in the Begonia. But the Chrysanthemum is the off-spring of one species, the Begonia is the composite representative of several. Among the most prominent and successful raisers of Begonias is the Rev. E. Lascelles, of Newton St. Loe, near Bath. For beauty of form, and for raising their flowers above the leaves without the aid of any support, Mr. Lascelles' varieties cannot be surpassed. So large were some of the flowers that were sent to us that we thought to give a fairer notion of their proportions by weighing them than by mere admeasurement. These measurements together with other details were given in our number for September 15, 1900, p. 209. In our

in every department. The family took much interest in hardy border plants, and their gardener cultivated them to perfection. He was exceedingly fond of florists' flowers, in which he had delighted even in boyhood. The writer can, indeed, recollect him telling that for months he went without a coat so that he might save money with which to purchase Pansies. At that time he was a weaver, but he became so much engrossed with his flowers that he gave up that occupation to follow gardening. At Kirkconnell he had an opportunity of growing these florists' flowers on a large scale, and such plants as Pentstemons, Phloxes, Pansies, Antirrhinums, &c., were always a pleasure to see when in bloom. He cultivated Begonias and zonal Pelargoniums unusually well also; though it might indeed be said of him that whatever he took in hand was as well done as circumstances would allow. Although not so old as he looked, for he did not spare himself, and two severe illnesses had broken down his health, it was with sad forebodings that the writer parted from him on the occasion of a visit to the garden during last summer. They were only too truly fulfilled, as his death from pneumonia has shown. *S. Arnott.*

WILLIAM DAVIS.—We regret to record the death of Mr. William Davis, after a painful illness, on Saturday, October 27, at the age of fifty-six

GROUPS AND SPECIMEN PLANTS.

The President's prize for a floral display of Chrysanthemums and suitable foliaged plants in pots, with cut blooms added at the discretion of the exhibitor, brought five competitors, and Mr. NORMAN DAVIS, Framfield Nurseries, Sussex, was awarded 1st prize. The displays were grouped around the two fountains, each exhibitor making a display around a half of a fountain. Four were accommodated thus, and the fifth was arranged under conditions as nearly similar as could be arranged. The 1st prize consisted of £15, the 2nd of £10, 3rd £8, and 4th of £6.

Mr. DAVIS had an imposing group, the front portion consisting of fine foliage plants, just above which appeared exceptionally large flowers of Mme. Carnot Chrysanthemum. At the back also, the grouping was bold, but tasteful, and all the blooms exhibited were remarkable for excellent quality. The 2nd prize was won by Mr. W. Howe, gr. to Lady Tate, Park Hill, Streatham Common. This exhibitor had a praise-worthy group whether judged from the standpoint of arrangement or of quality, but it was totally different from the exhibit from Mr. DAVIS, and the blooms in this case were not cut specimens. The 3rd prize was awarded to what may be described as the most interesting display made in this class. It was one from PERCY WATERER, Esq., The Briars, Fawkham, Kent, the Chairman of the Society's Executive Committee. Almost every type of Chrysanthemum was represented in the group, and it was as pretty as interesting. Nor was good quality lacking, for some blooms of Japanese, and Japanese incurved varieties, were in every respect first-class. 4th, Mr. E. Dove, gr. to H. E. Fry, Esq., Bickley Hall, Kent, whose arrangement was that of a bank of blooms, the surface of which was relieved by graceful foliage plants.

Trained plants.—There were fewer trained specimens than usual, but entries were made in four classes. The best collection of six plants came from Mr. E. Easy, gr. to F. Bishop, Esq., The Grange, Highbury New Park. He had some perfect specimens, including the varieties John Shrimpton, Madame Carnot, and Colonel W. B. Smith; 2nd, Mr. F. E. Wraight, gr. to J. Troup, Esq., Essex Lodge, Upper Clapton.

With four standard-trained specimens Mr. EASY was again 1st with well-bloomed plants with very healthy foliage; 2nd, Mr. GEO. WHITEHORNE, Forest Lodge, Walthamstow; 3rd, Mr. WRAIGHT.

INCURVED BLOOMS.

Thirty-six Blooms, distinct.—It is some years since incurved have been shown in such fine condition as in the collections from the winner of the 1st prize on this occasion, namely, Mr. W. Higgs, gr. to J. B. Hankey, Esq., Fetcham Park, Leatherhead. The specimens were large, and most of them well built, fine, conical blooms, such as this type is expected to produce, but fails often. The varieties were Chrysanthemum Bruant (large, not good), Ernest Cannell, Ma Perfection, R. Hatton, Mrs. G. Williams (yellow), Lady Isabel, Madame Ferlat, Countess of Warwick, C. H. Curtis, Mrs. H. J. Jones, Hanwell Glory (large, but lacking good centre), Duchess of Fife. Second Row: Robert Petfield, Yvonne Desblanc, Miss A. Hills, Ialene, J. Agate, Globe d'Or, Violet Foster, Empress of India, Topaze Orientale, Mrs. W. Howe (very good), Madame Verneuil, Lord Alcester. Front Row: John Doughty, John Lambert, Pearl Palace, Princess of Wales, C. B. Whitnall, Golden Empress, Mrs. R. C. Kingston, Geo. Haigh, Thos. Lockie, King of the Yellows, Alfred Salter, and Bonnie Dundee; 2nd, Mr. G. J. Hunt, gr. to PANTIA RALLI, Esq., Ashted Park, Epsom, who was a long way behind Mr. Higgs, but who nevertheless had good specimens of Ialine, Lord Alcester, Golden Empress, and C. H. Curtis. Mr. W. Jinks, gr. to E. Bruce, Esq., The Beeches, Walton-on-Thames; and Mr. J. H. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, Derby, followed. There were six exhibitors in the class, showing that the incurveds are still a type to be reckoned with at exhibitions.

Twenty-four Blooms distinct.—The quality of the blooms in this class was very superior. The 1st prize was won by Mr. W. Higgs, with large well-built flowers, the varieties being for the greater part similar to those shown in the larger class. The following were excellent, Robert Petfield, Thos. Lockie, Mrs. H. J. Jones, very large white bloom, lilac-coloured at base; Globe d'Or, Pearl Palace, Henry Ellis, Mrs. R. C. Kingston, and Countess of Warwick. Mr. G. J. HUNT was 2nd; Mr. W. MEASE 3rd; and Mr. SILAS COLE 4th.

The class for twelve blooms distinct was won by Mr. A. Sturt, gr. to N. L. COHEN, Esq., Round Oak, Englefield Green; Mr. W. C. MEREDITH being 2nd. There were several other prizes.

Six Blooms of one Variety.—Of the incurveds shown the variety adjudged to be best was that of Duchess of Fife, the finest blooms of which were from Mr. W. L. Bastin, gr. to ALEX. HENDERSON, Esq., M.P., Buscot Park, Faringdon, Berks (extra good). The same variety, from Mr. G. J. HUNT was 2nd; and from Mr. C. Penford, gr. to Sir F. FITZWYGRAM, Leigh Park, Havant, 3rd. The variety, C. H. Curtis, was given 4th prize.

JAPANESE BLOOMS.

Japanese blooms, upon the whole, were not more remarkable than usual, but they were exhibited in abundance, and were more prominent than all the rest of the types together. In the largest class, which was one for forty-eight blooms, distinct, Mr. F. S. VALLIS, Bromham Fruit Farm, Chippenham, was 1st, and won the Holmes Memorial Challenge Cup and £10. The varieties were Phœbus, Mrs. E. Barter, E. Molyneux (fine colour), Soleil d'Octobre, Madame Carnot, Mrs. J. Bryant, Simplicity, Mrs. W. Gusham, Mr. A. Barrett, Le Grand Dragon (very large, one of the finest in the collec-

tion, colour yellow, with faint markings of red), Mrs. J. Lewis, M. J. Bruant, Charles Davis, Mrs. W. Popham, R. Hooper Pearson (deep yellow), Australie. Centre row: Mrs. Mease, Lord Salisbury (fine deep red, large flattish bloom), C. B. Haywood, Mrs. Barkley (beautiful soft mauve colour, excellent petal), Dora Heixheimer, Calvat 1899, Sir H. Kitchener (very good), Miss A. Byron, Surpasse Amiral, Lady Hanham, Madame P. Rivoire, Secretary Fierens, Viviani Morel (poor), N. Pockett, Lord Ludlow (highly coloured, rather small), and Pride of Madford (rich rosy-purple). Front row: Pride of Exmouth, Edith Tabor, E. Towers, Madame Gustave Henri, an unnamed seedling, M. Chenon de Leché, Lady E. Clarke, Mrs. Vallis, a seedling Japanese (orange-yellow colour and buff, high centred flower), E. Beauty, Mrs. G. W. Palmer, Mutual Friend, G. J. Warren, Mons. Hoste (very large), Mr. L. Remy, and Mrs. Coombes. The 2nd prize was won by Mr. W. Mease, gr. to A. TATE, Esq., Downside, Leatherhead. Amongst his best varieties were Souvenir de M. F. Rosette (very bright purple), Mrs. Mease, Lily Mountford, Mr. T. Carrington, Mrs. Barkley (very large), R. Hooper Pearson, M. Chenon de Leché, Eva Knowles, and Viviani Morel. 3rd, Mr. R. Kenyon, gr. to A. F. HILLS, Esq., Monkham, Woodford, Essex, who had smaller blooms, but of very fine colour, especially a bloom of Lord Ludlow; 4th, Mr. W. Jinks, gr. to E. BRUCE, Esq., The Beeches, Walton-on-Thames, whose blooms were also remarkable for excellent colour. There were seven exhibitors.

Twenty-four Blooms, distinct.—The 1st prize in this class (one which always draws to itself a large number of competitors) was won by Mr. J. W. Roberts, gr. to G. T. SKILBECK, Esq., Clonard, Harrow Weald. In this stand was one of the largest blooms of Mrs. Barkley we have seen.



FIG. 108.—DOUBLE FLOWERED BEGONIA "DOROTHY HARDWICK"; COLOUR SHELL-PINK.

(SEE P. 343.)

Other noticeable varieties were Le Grand Dragon, Mrs. Mease, Mrs. White Popham, Florence Molyneux, R. Hooper Pearson, Lionel Humphrey, Phœbus, &c.; 2nd, Mr. W. Higgs, gr. to J. B. HANKEY, Esq., Fetcham Park, Leatherhead; 3rd, Mr. W. C. Meredith, gr. to G. WILDER, Esq., Stansted Park, Emsworth, Sussex. There were ten exhibitors of this number of blooms.

Twelve Blooms, distinct.—Mr. J. Sandford, gr. to G. W. WRIGHT INGLE, Esq., Woodhouse, North Finchley, showed the best collection of twelve blooms, of which the following were best:—C. F. Payne, Mrs. H. Weeks, R. Hooper Pearson (excellent), Australian Gold, Eva Knowles, M. Chenon de Leché, N.C.S. Jubilee; 2nd, Mr. A. Allan, gr. to Lord Sturfield, Gunton Park, Norwich; 3rd, Mr. E. Coleman, gr. to T. L. BOYD, Esq., North Frith, Tonbridge. There were ten exhibitors.

Six Japanese Blooms, Incurved, distinct.—The 1st prize in this class was awarded to Mr. R. KENYON, who showed the varieties N.C.S. Jubilee, Nellie Pockett, President Nonin, Wonderful (a flower with extremely wide petals, red colour, with buff reverse), Madame Desblanc, and R. Powell.

Six blooms of a white variety.—The variety Madame Carnot, finely shown by Mr. W. Higgs, was placed 1st; and Madame Gustave Henry, from Mr. W. C. MEREDITH, 2nd; Madame Carnot, from Mr. W. L. BASTIN, was 3rd.

Six blooms of a yellow variety.—The 1st prize was awarded to the variety Mrs. Mease, from Mr. F. KING; 2nd to Phœbus, from Mr. W. Higgs; and 3rd again to Mrs. Mease, from Mr. W. L. BASTIN. We think the judges are ill-advised to give a 1st prize to Mrs. Mease in a class for yellow blooms. It is seldom the colour of rich cream, much less illustrative of a good yellow.

Six blooms of any colour except white or yellow.—Australie, from Mr. W. HIGGS, won premier place in this class; 2nd,

M. Chenon de Leché, from Mr. W. C. MEREDITH; 3rd, Mrs. Barkley, from Mr. NORMAN DAVIS, Framfield Nurseries Sussex.

Six Blooms of hairy-petalled varieties.—The winner of the 1st prize for hirsute varieties was Mr. HENRY LOVE, Melville Terrace, Sandown, Isle of Wight, who showed Beauty of Truro, Hairy Wonder, Mrs. Dr. Ward, and Louis Boehmer; Hairy Wonder is still the prettiest of all. 2nd, Mr. P. Foster, gr. to R. NIVISON, Esq., Tenterden Hall, Hendon, who showed Hairy Wonder in much superior condition.

JAPANESE BLOOMS IN VASES.

As last year, there was a class for twelve vases of specimen blooms, five in each vase. The vases were 16 inches in height, and not less than 6 inches length of stem was visible above the vase. These were exhibited on tables 24 inches high. Mr. VALLIS, who won 1st prize in the class for forty-eight Japanese blooms on the boards, also won 1st honours in this class, the 1st prize for which consisted of the N.C.S. large Gold Medal, and a sum of £20 offered by Mr. H. J. Jones, Hither Green, Lewisham. No better Japanese blooms than those shown by Mr. VALLIS in this class have ever been exhibited at these shows. The varieties were Nellie Pockett, Australie, M. Chenon de Leché (grand), Le Grand Dragon (immense), Pride of Madford (showing perfectly developed colour), Phœbus, Calvat 1899 (a very large, slightly incurved and twisted Japanese, white, tinted with pink; petals very wide and good), Ed. Molyneux, Mrs. Mease, M. Louis Remy, Mrs. Barkley (excellent), and Mrs. J. Lewis. It would have been much better had the tables been narrower, and but one row of vases placed on each, the double row tending to destroy the effect of each. We believe that Mr. VALLIS' group was also awarded a Gold Medal by the deputation from the French Chrysanthemum Society, as being the best exhibit in the show. The 2nd prize, which consisted of a Gold Medal and £15, was won by Mr. W. MEASE, whose collection was arranged in a single row upon a table, the effect being heightened thereby, and he had excellent specimens of Graphic, Mrs. G. Carpenter, Eva Knowles, Mdlle. D'Ys (pink, rather small bloom, with numerous short petals), Madame Carnot, Madame G. Debie, and Mr. F. Carrington; the rest of the varieties were similar to others in the 1st prize exhibit. 3rd, Mr. W. C. Meredith, gr. to G. WILDER, Esq., Stansted Park, Emsworth, who won a Silver-gilt Medal and £10. 4th, Mr. Silas Cole, gr. to Earl SPENCER, Althorp Park, Northampton, who won a large Silver Medal and £5. 5th, Mr. R. Kenyon, gr. to A. F. HILLS, Esq., Monkham, Woodford, Essex. There were nine exhibitors in this class.

OTHER TYPES.

Anemone Blooms.—The class for twenty-four large-flowered Anemone blooms was won by Mr. W. Ring, gr. to J. WARREN, Esq., Capel House, Waltham Cross, who had a very fine collection indeed. We will give a list of the varieties shown, that cultivators who may wish to secure some of this section to their collection may know what are the best: Mr. Hugh H. Gardner, Robert Burns, Nelson, Madame Gabrol, Le Chalonais, colours yellow, brown, and buff, blended; Sir Walter Raleigh, John Bunyan, yellow; Empress, W. W. Astor, Rousche d'Abondance, deep red; Gladys Spaulding, a very high cushioned yellow bloom; Madame R. Owen, large flattish white bloom; Enterprise, pretty pink colour; Delaware, white ray petals, with yellow cushion; M. Dupanloup, Mdlle. N. Bruin, Grand Alveole, Queen Elizabeth, Junow, Mrs. P. R. Dunn, white; M. Charles Lebrocqz, soft yellow colour; Mrs. Judge Benedict, J. Thorpe Junior, and Beauté Toulousienne. The 2nd prize was won by Mr. W. Jinks, gr. to E. BRUCE, Esq., The Beeches, Walton-on-Thames, who had an excellent collection, including very fine blooms of the richly-coloured Descartes, Owen's Perfection, Robin Adair, &c.; 3rd, Mr. A. Ives, gr. to C. E. JUKES, Esq., Hadley Lodge, Barnet—there were five collections. Mr. A. Ives obtained 1st prize for twelve large Anemone blooms; and Mr. W. RING was 2nd, there being one other exhibitor.

Mr. W. RING won 1st place for twelve Japanese Anemone blooms distinct; and Mr. A. Page, gr. to A. L. REYNOLDS, Esq., Ravenscroft, North Finchley, was 2nd—there were four exhibitors. The differences between these sections of Anemone blooms are not great, and apart from the exhibition point of view, need not any consideration.

Anemone Pompons, however, are much different in size, and some of them are very pretty. Mr. C. Brown, gr. to R. HENTY, Esq., Langley House, Abbots Langley, had the best of these; and Mr. T. L. TURK was 2nd.

Pompons.—These are very attractive, neat little flowers, and quite worth cultivation. The 1st prize for a collection of nine Pompon varieties, distinct, six blooms of each, in vases, came from Mr. A. Page, gr. to A. L. REYNOLDS, Esq., Ravenscroft, North Finchley, who had a pretty collection of flowers, but omitted to attach names to the varieties, as should have been done; the 2nd prize was won by Mr. T. CARY, gr. to A. G. MEISSNER, Esq., Aldenholme, Weybridge; and 3rd, Mr. T. L. TURK, gr. to T. BOVEY, Esq., Southwood House, Highgate. There were numerous exhibits in this class, and there was another class for six blooms.

Single-flowered varieties.—There were four collections of six varieties of single flowers in bunches of six blooms shown in vases. The best came from Mr. W. Aldridge, gr. to G. LACEY, Esq., Springfield House, Palmer's Green, and the varieties were Victoria, pale yellow or cream-coloured; Lady Churchill, red; W. A. Renfrey, rich crimson; Earlwood Glory, pure white; Purity, white; and Edith, rose-coloured, with slight white band around disc; 2nd, Mr. W. Forbes, gr. to Madame NICOLS, Regent's Park, Surbiton; and 3rd, Mr. A. Page, gr. to A. L. REYNOLDS, Esq.

Reflected Blooms.—There is not a great interest in this type of bloom, but on the above occasion, there were as many as four exhibitors entered in a class for twelve blooms. The 1st prize was won by Mr. T. CARYER, gr. to A. G. MEISSNER, Esq., Aldenholme, Weybridge. The following were the varieties staged, and it will be seen that most of them have been well known for years past. Cloth of Gold, Pink Christine, King of Crimson, Phidias, Cullingfordi, Mrs. Forsyth, Peach Christine, Golden Christine, and Miss L. Lunn. Mr. G. W. FORBES, who was 2nd, included the varieties Dr. Sharp, Amy Furze, Charles Tutt, and The Transvaal. 3rd, Mr. J. BARRANCE, gr. to G. W. TAYLOR, Hadley Bourne, Barnet.

AMATEURS, DIVISION A.

Japanese Blooms.—The best collection of eighteen blooms, distinct, was shown by Mr. DAVID AGER, gr. to MILTON BONE, Esq., Down House, Bath Road, Reading. The following varieties were shown in best condition, Australe, Mrs. H. Weeks, Rayonnante, M. Chenon de Leche, Vivand Morel, Jas. Bidscope, Mutual Friend. 2nd, Mr. G. ACOCK, gr. to Mrs. BACON, Stoneleigh, Worcester Road, Sutton, Surrey; 3rd, Mr. C. H. MARTIN, gr. to Mrs. LANGTON, Raymead, Hendon. There were eight exhibitors.

For a collection of twelve blooms, distinct, Mr. A. PAGE was 1st, and included a very finely coloured bloom of Charles Davis; M. Chenon de Leche was also capital. 2nd, Mr. L. GOOCH, gr. to T. WICKHAM JONES, Esq., Twickenham Lodge, South Norwood. There were nine exhibitors.

Mr. JNO. DENYER, gr. to EDWIN SMITH, Esq., Ingleside, Chatham, who won a class for six blooms, had a splendid specimen of Hairy Wonder.

Incurved Blooms.—In a class for twelve blooms, distinct, the quality was much less good than those in the open classes. The 1st prize was won by Mr. C. H. MARTIN; and the 1st for six blooms, by Mr. W. LEPPARD, gr. to F. VIGORS, Esq., Oakdene, Reigate.

DECORATIVE CHRYSANTHEMUMS

Special prizes were offered in two classes by Mr. PERCY WATERER for cut blooms of decorative varieties of Chrysanthemums, in each case to be arranged on a table measuring 6 feet by 3 feet. In the one class the blooms were to be judged from the point of view of "finish," and in the other, greater consideration was to be given to the arrangement adopted, and the harmony or otherwise of the colours. A. R. KNIGHT, Esq., 63, Hardinge Road, Ashford, Kent, obtained a 1st prize in one of the classes, but the results were not so good as they might have been.

AMATEURS, DIVISION B.

The competition in the leading class, that for eighteen Japanese blooms distinct was very good, five stands of much merit being staged. The 1st prize was taken by Mr. MARTIN SILSBURY, Providence, Shanklin, Isle-of-Wight. The best owners were Mrs. Lewis, Australe, Mrs. Vallis, Mrs. White Popham, Le Grand Dragon, Mrs. Barks, Vivand Morel, Chenon de Leche, Mrs. Barkley, Mrs. Mease, and E. Molyneux. 2nd, A. R. KNIGHT, Esq., 63, Hardinge Road, Ashford, Kent. 3rd, Mr. W. PRUDEN-CLARK, York Road, Hitchin. Eleven exhibitors staged.

For twelve blooms, the 1st prize was awarded to Mr. GEORGE HEAL, Holly House, Compton, Guildford, Mrs. Mease, and Lord Ludlow being two notable blooms in this stand.

In the classes for incurved blooms, Mr. W. G. PRUDEN-CLARK was the most successful exhibitor of twelve specimens in not fewer than six varieties, with blooms of average merit, Hanwell Glory and Princess of Wales being very good. 2nd, Dr. SHARPE GREENWOOD, Huntspill, Bridgwater. The last-named exhibitor was a good 1st in the class for six blooms on three varieties.

Four exhibitors staged six bunches of Pompons, the 1st prize going to Mr. J. WRIGHT, Salisbury Terrace, Long Lane, Finchley. 2nd, Mr. HEMBRY, Church Street, Highgate.

MAIDEN-GROWERS CLASSES.

These were strongly represented, twelve exhibitors staging six distinct blooms, the 1st prize going to Mr. William Shute, gr. to F. MACHIN, Esq., Ismeir, Otlands Chase, Weybridge, for finely-developed blooms. 2nd, Mr. A. ROBERTSON, gr. to F. J. JARROW, Esq., St. John's Wood. Mr. SHUTE was also 1st for a corresponding number of incurved blooms.

TABLE DECORATIONS.

In Class 53, for two designs of Chrysanthemum blooms, arranged with Chrysanthemum or other appropriate foliage, to illustrate the decorative value of the flower, each exhibitor to be allotted a table space of 6 feet by 3 feet, Messrs. SCRIVENER & Co., Florists, Watford, were 1st with an anchor arrangement in white flowers, and a harp in yellow, relieved with various coloured foliage and trails of Smilax and Ampelopsis; Mr. A. MERIDEW, 308, Southampton Street, Camberwell, S.E., was 2nd with a totally different arrangement, consisting of several vases and small stands of flowers.

With one vase of six blooms of one variety of Japanese Chrysanthemums with any foliage, Mr. Howe, gr. to Lady Tate, Streatham Common, was 1st; 2nd, Mr. BROOKES.

In a class confined to ladies for a hand-basket of Chrysanthemums arranged with any foliage, Mrs. W. STRONELL, 213, Brixton Hill, S.W., was 1st with a rather large basket but lightly arranged with yellow and white Chrysanthemums and coloured foliage, Croton leaves, &c., together with variegated grasses and Asparagus.

PREMIER BLOOM.

A special prize of one guinea was offered by Mr. J. T. SIMPSON, for the premier bloom of Japanese Chrysanthemum in the exhibition. This was adjudged to be a specimen of the variety Mrs. Barkley, in the collection of forty-eight Japanese blooms shown by Mr. W. MEASE. It is unnecessary to describe the specimen as a fine one.

REPRESENTATIVES OF TYPES.

A class was arranged for a collection of cut blooms, to represent the different types of form, colour, and size, upon a table 6 feet by 3 feet. Mr. NORMAN DAVIS was awarded 1st prize, and his exhibit included at least six of the ten sections enumerated in the National Chrysanthemum Society's Jubilee Catalogue, and at least one exhibit each of Pompons and singles. But the Japanese varieties seemed to overpower the rest in the collection, and the exhibit was not nearly so illustrative of the diverse types of Chrysanthemum as the display already noticed from Mr. WATERER.

FRUIT AND VEGETABLES.

With white Grapes, Mr. LINTOTT, gr. to WALPOLE GREENWELL, Esq., Marden Park, Caterham, was 1st, with three good bunches of Muscat of Alexandria; 2nd, Mr. W. J. BATHO, Nether Street Nurseries, Finchley, with Canon Hall, very fine berries, but somewhat uneven.

With a similar number of bunches of black Grapes, Mr. CHUCK, gr. to H. THELLUSSEN, Esq., Broadworth Hall, Doncaster, came in 1st with very fine Gros Colmar; 2nd, Mr. TAYLOR, gr. to C. BAYER, Esq., Tewkesbury Lodge, Forest Hill, with the same variety, also very good.

Mr. W. ALLAN, gr. to LORD SHEFFIELD, Gunton Park, Norwich, was 1st with six dishes of Pears; 2nd, Mr. W. H. STOWERS, Sittingbourne, the last named exhibitor being 1st with six dishes of dessert Apples.

Mr. SILAS COLE, gr. to EARL SPENCER, K.G., Althorp Park, Northampton, staged some very fine samples of Celery, and was awarded the 1st prize offered by Mr. SYDENHAM.

Mr. A. G. GENTLE, gr. to Mrs. DENISON, Little Gaddesden, Berkhamsted, took the 1st prize for Cauliflowers, Carrots, Parsnips, Onions, Potatoes, and won the Silver Cup offered by Mr. R. SYDENHAM.

Messrs. WEBB & SON'S prizes for a collection of vegetables were won by Mr. E. BECKETT, gr. to LORD ALDENHAM, Aldenham House, Elstree; Mr. BASILE, gr. to Rev. O. L. POWELL, Woburn Park, Weybridge; and Mr. W. L. BASTIN, who were placed in the order in which their names are given.

NON-COMPETITIVE EXHIBITS.

As usual at this exhibition, there was a large number of exhibits from members of the horticultural trade and others, to which honorary awards were made. Most of these displays were arranged on the ground floor, a few also finding a place in one of the galleries.

Messrs. H. CANNELL & SONS, Swanley, Kent, were awarded a large Gold Medal for an exhibit that abundantly furnished one of the cross tables. There were exhibition blooms of varieties of Japanese Chrysanthemums, including Mermaid, a white flower with incurving forelets; Swanley Giant, pink; also a pink seedling from Madame Carnot, &c. Some of the curious and decorative types were shown also, including Gold Locke, of the type of "What Ho"; Gold Lace, with thread-like forelets, yellow; White Thread, and a very pretty mauve-coloured single flower named Ladysmith. The exhibits of Cannas, and of sprays of blooms from the winter flowering Pelargoniums, were as bright and good as ever. There were also Tuberoses, Violet, &c., from the same firm.

Mr. H. J. JONES, Ryecroft Nurseries, Hither Green, Lewisham, exhibited a group of plants in pots immediately under the great organ, to which, by means of a trellis, a background of 15 feet high was obtained. Most of the varieties included were new ones, some of the most attractive being W. H. Webb, a fine, incurved, Japanese flower, rose colour, with silver reverse; Mrs. G. Mileham, an excellent novelty, already described in these columns, when it was awarded a First-class Certificate by the National Chrysanthemum Society; Mrs. Greenfield, which may be described as an improved Phoebe; May Neville, a very large Japanese flower for distributing next season; Mrs. J. C. Neville, a very large white Japanese flower; Edith Shrimpton, a white incurved Japanese; and Mr. J. CUTTS, a large, rose-coloured Japanese (Gold Medal).

Mr. W. J. GODFREY, Exmouth Nurseries, Devon, made an excellent display of fine large Chrysanthemum blooms, most of them representing new varieties raised from seeds sown in March last. There were also noticed Yellow Mutual Friend, Mr. L. Remy, Godfrey's Pride, Yellow Globe, Loveliness, a fine yellow incurved Japanese, &c. (Gold Medal).

Mr. JNO. GREEN, Dereham Nurseries, Norfolk, made an excellent display of decorative varieties of Chrysanthemums, especially prominent were Lizzie Adecock, yellow; White Quintus, and crimson Source d'Or. Mr. GREEN showed Cactus Dahlias, varieties of Heliotropes, &c. (Silver-gilt Medal).

Mr. ROBT. OWEN, Maidenhead, showed a quantity of cut blooms, inclusive of seedling varieties.

Groups of Chrysanthemum plants in pots, were shown by Mr. R. C. PULLEN, Monkham's Nursery, Snake's Lane, Woodford (Gold Medal); Mr. J. SPINK, Walthamstow (Large Silver Medal); Messrs. J. PEED & SONS, Roupell Park Nurseries, West Norwood (Silver-gilt Medal); and Messrs. JNO. LAING & SONS, Forest Hill Nurseries, S.E.

Messrs. GEO. BOYES & Co., Aylestone Nurseries, Leicester, showed a considerable quantity of Carnation blooms, and plants in pots.

Messrs. A. W. YOUNG & Co., Stevanage Nurseries, Herts., had a small group of Cactaceous plants.

Mr. THOS. ROCHFORD, Turnford Hall Nurseries, Broxbourne, Herts., made an exhibit of plants in flower, which have been "retarded" by the system described in these pages last week. There were Azalea mollis, Spiraea, Lilium speciosum, L. longiflorum, and Lily of the Valley. Bulbs and plants were also shown that have been recently removed from the cold-air chamber (Gold Medal).

Messrs. B. S. WILLIAMS & SON, Victoria and Paradise Nurseries, Upper Holloway, London, had an exhibit of plants, including Orchids, Ericas, Cyclamens, Lily of the Valley, &c.; also a group of Conifers and shrubs.

Messrs. I. HOUSE & SON, Coombe Nursery, Westbury-on-Trym, exhibited flowers of a number of varieties of Violets.

A much-fasciated stem of Chrysanthemum was shown by Mr. PERCY WATERER. The flattened stem was 2½ inches across, and bore seven or eight flowers, more or less irregular.

Mr. H. LOVE, Sandown, Isle of Wight, exhibited a few new Japanese Chrysanthemums.

Messrs. W. CUTBUSH & SONS, Highgate, had a large and attractive exhibit in one of the galleries, for which a large Gold Medal was awarded. The mounted group included batches of plants of Begonia Gloire de Lorraine, Ericas, Carnations, Lilium longiflorum, Bouvardias, Lily of the Valley, Azalea mollis, Chrysanthemums, &c.; also fruits of Apple Monstrous Incomparable.

Mr. JNO. FORBES, nurseryman, Hawick, N.B., exhibited well bloomed plants of Caledonia, the white sport from Begonia Gloire de Lorraine.

Messrs. GEO. BUNYARD & Co., Maidstone, had an exhibit of 150 varieties of Apples and Pears in excellent condition (large Gold Medal).

Messrs. JNO. LAING & SONS, had a large collection of holly leaves, the exhibit being freely decorated with foliage plants and flowering Begonias, &c. (Gold Medal).

Messrs. S. SPOONER & SONS, Hounslow, had also a collection of Apples and Pears (large Silver Medal).

Table decorations and florist's designs were shown by Mr. JAS. WILLIAMS, Ealing, and Mr. ROBT. JAMESON, 13, Nassau Street, Dublin. It is seldom an Irish exhibitor is seen at this show.

There were other stands and exhibits that advertised particular manures, sundries, and garden appliances, including nitrate of soda, Lawes' chemical manures, Mr. Jos. Arnold's peat for Orchids from Leighton Buzzard; "Velthea," a specific for Chrysanthemum "rust," shown by Messrs. W. WOOD & SON, Wood-Green, London, who had a large exhibit of sundries; Thomson's Vine and Plant Manure, exhibited by Mr. J. GEORGE, Putney, who had also a collection of horticultural sundries; Haydon's Patent Broom Holder; Ohlendorf's Chinchas Peruvian guano, exhibited by Messrs. D. DOWN & SON, Ravenscourt Avenue, London; Haw's patent watering-can, shown by J. HAWS, 4, Glaskin Villas, Lea Bridge Road, Clapton; Sam Deard's "Magic" ventilator and Exhaust, &c.

ROYAL HORTICULTURAL.

NOVEMBER 6.—On this occasion the Drill Hall, James Street, Westminster, was rendered interesting and gay with large numbers of Japanese Chrysanthemums, shown as cut blooms and plants, most of which were of exhibition proportions and quality; and of Begonias in variety. Of Orchids there was a very fair display for the time of year, and many were of considerable interest, especially a new cross-bred Cypripedium, of rich colouring, shown by Messrs. CHARLES-WORTH & Co. The display of fruit, brought together by the offer of the Sherwood Cup for collections of fifty dishes of Apples and Pears, was most enlightening as to the capabilities of the soil and climate of widely separated districts in this country.

Floral Committee.

Present: W. Marshall, Esq., in the Chair; and Messrs. O. Thomas, C. T. Drury, H. B. May, J. H. Fitt, G. Nicholson, G. Gordon, C. R. Fielder, W. Bain, C. E. Pearson, C. E. Shea, H. J. Jones, H. Cutbush, E. Jenkins, H. Turner, G. Paul, E. T. Cook, J. Walker, J. Jennings, and J. Hudson.

Messrs. PAUL & SON, The Old Nurseries, Chesham, showed a large number of Roses in pots, chiefly varieties of Teas and hybrid Teas. We noted Sunrise, Madame Chatenay, flesh colour, full, and of large size; Souvenir de Madame Drivon, a creamy-white flower, and fibret-shaped bud; The Bride, Lady Battersea, Bridesmaid, Bessie Brown, Isabella Sprunt, Anemone hybrida, a single flowered species possessing pink-coloured petals (Silver Flora Medal for the group).

CHRYSANTHEMUMS.

Numerous flowers of varieties of the Japanese sections were shown, and likewise one of the usual incurved varieties. There were but few that were favoured by the Committee, and the names of these will be found in the Award list.

Mr. W. WELLS, nurseryman, Redhill, Surrey, showed several stands of Japanese Chrysanthemums of excellent quality. Seven of his varieties received recognition—a large number for a relatively small collection.

Mr. W. J. GODFREY, nurseryman, Exmouth, had likewise a number of superior Japanese varieties, of which three received Awards of Merit.

Mr. F. C. FOWLE, Devon Chrysanthemum Nursery, Teignmouth, exhibited six dozen Japanese varieties of good size and general appearance, including the best of the newer varieties.

Messrs. BARR & SONS, King Street, Covent Garden, W.C., showed blooms of the enormous exhibition standard, a quantity of such as are afforded by plants growing in the open border.

Messrs. J. VEITCH & SONS showed, in a group placed on the floor near the James Street entrance, an imposing group of Japanese varieties, tall, well furnished with foliage, and with from two to four flowers each. The quality generally was good (Silver Banksian Medal).

MISCELLANEOUS.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. Jas. Hudson), showed, as he usually does annually, a quantity of plants of *Salvia splendens* var. *nana*, abundantly bloomed; a plant each of *Nymphaea stellata*, Berlin variety, a flower having blue petals, which are at the base interiorly of a yellow colour, and *N. pulcherrima*, a species with flowers of a lighter tint of blue; *Begonia Arthur Mallett*, valuable for its leaf colour, which is dull crimson, and for its habit which is shrubby and ascending. He exhibited quite a large number of *Begonia Gloire de Lorraine* very well bloomed, and a similar, or rather an identical variety, named Mrs. Leopold de Rothschild, the slight differences being due to propagating cuttings taken from the tops of the plants of *Gloire de Lorraine* (Silver Banksian Medal).

EARL GREY, Coombe Court, Kingston-on-Thames (gr., Mr. J. Smith), showed a large number of plants of *Begonia Gloire de Lorraine* of neat dwarf growth, and a smaller number of *Hoteia japonica* in good bloom, for the purpose of affording examples of cold frame treatment in the case of these plants (Silver Banksian Medal).

Messrs. CRIPPS & SON, nurserymen, Tunbridge Wells, showed a group on a table of *Begonia Gloire de Lorraine*, surrounded with a line of plants of the bright blue-flowered *Browallia speciosa* major, both being remarkable for their dwarf character and floriferousness (Silver Banksian Medal).

H. J. ELWES, Esq., Colesbourne Park, Andoverford (gr., Mr. Beasley), showed a number of plants of *Nerine Sarniensis*, being wild seedlings imported in 1893, and now flowering for the first time. The colours are tolerably varied, and the corymbs more lax than we are accustomed to see; otherwise, the differences between them and artificial crosses, and plants long in cultivation, is not so great as one would have expected.

From Messrs. J. VEITCH & SONS, Chelsea, came numerous plants of *Begonia Mrs. Heal*, very freely flowered. The colour of the flower is deep scarlet, and the plant most useful in decorations at this season. The firm showed likewise a number of plants of their new strain of *Streptocarpus* in a variety of colours, trusses of warm-house *Rhododendrons*, and a plant in flower of *Polygonum vacciniifolium* (Silver Flora Medal).

MISS ADAMSON, South Villa, Regent's Park (gr., Mr. C. Kelf), showed plants in pots, chiefly *Celosias*, *Codibeums*, and *Chrysanthemums*, to show what can be well grown in gardens situated within 2 miles of Charing Cross. So good were they that a Silver Flora Medal was awarded for the group.

Messrs. BARR & SON, King Street, W.C., exhibited a quantity of hardy flowers, including *Kniphofia Triumph*, late *Pentstemons*, *Lupinus polyphyllus*, *Crataegus pyracantha* Lelandi, &c.

MR. TURNELL, gr., The Woodlands, Streatham Hill, S.W., showed a large mixed group on the floor near the entrance, consisting of small *Palms*, *Celosias*, *Ferns* in variety, very nicely coloured *Primula obconica*, the whole having a pleasing effect (Silver Banksian Medal).

Messrs. PEED & SON's exhibit of fruit was set off in an admirable manner by a back row of *Soneria Souvenir de Louis Van Houtte*, a plant having silver leaves, white spotted; *Begonia Gloire de Lorraine*, and *Lea amabilis*.

MR. J. FORBES, Hawick, N.B., showed his new, white-flowered *Begonia Caledonia*, a floriferous variety, useful in the winter season. Flowers small, numerous, and white. Derived from *Gloire de Lorraine*.

Stevensonia grandifolia, a well-known *Pal'm* with reddish-brown leaf-stalks, furnished with numerous spines. A plant of handsome aspect, shown by Messrs. F. SANDER & CO., St. Albans.

Messrs. JOHN WATERER & SONS, LTD., Bagshot, showed a large group of *Conifers*, taken up from the open ground, in fine condition; and as regards varieties with variegated foliage showing the characteristics capitally, we remarked nice examples of *Retinospora obtusa* var. *aurea*, *Cupressus Lawsoniana lutea*, *C. L. Westermanni*, *C. L. versicolor*, *Taxus hibernica* var. *aurea*, *Juniperus japonica* var. *aurea*, &c. (Silver Banksian Medal).

Awards.

AWARDS OF MERIT.

Japanese Chrysanthemum Loveliness.—A very fine incurved flower; colour yellow.

Japanese Chrysanthemum Wallace E. Vonder.—Petals of carmine colour, and the reverse of the tips of a brown tint. It is an incurved flower.

Japanese Chrysanthemum Madame von Andre is an incurved sport from *Mutual Friend*. Colour lemon yellow. These three varieties were shown by Mr. W. J. GODFREY, Exmouth.

Japanese Chrysanthemum W. B. Church.—A very large crimson flower; the petals tipped with buff.

Japanese Chrysanthemum Mathew Smith.—Orange and crimson; a bold, showy bloom.

Japanese Chrysanthemum C. J. Salter, of a lemon-yellow tint.

Japanese Chrysanthemum Lord Ludlow, with incurved contorted florets, which are amber in the centre, and have red margins.

Japanese Chrysanthemum Glorious.—Deep crimson variety of the decorative section.

Japanese Chrysanthemum Khaki.—A fine incurved variety of a crimson colour, with florets tipped with buff.

These seven varieties were shown by Messrs. W. WELLS & CO., Earlswood, Redhill.

Incurved Chrysanthemum Miss Florence Southern.—A yellow rose-tinted flower, of good form and build. Shown by Mr. A. W. TANNER, Cerne Abbas, Branksome Park, Bournemouth.

Japanese Chrysanthemum Mrs. R. Durling.—A rosy-purple, reflexed flower, full and good. Shown by Mr. C. GRIFFIN, Waltham Leigh, Aislestone, Surrey.

Japanese Chrysanthemum Lizzie Adcock.—A sport from *Source d'Or*, a fair quality small flower of a uniformly deep orange colour, having straight short florets. Shown by Mr. R. HOLMES, Norwich.

Japanese Chrysanthemum Lady Esther.—A fine variety with incurving florets; colour cream or pale yellow. From Mr. H. PERKINS.

Nerine Lady Louisa Longley.—Shown by H. J. ELWES, Esq., Andoverford, Gloucestershire.

Tea Rose Liberty.—A dark crimson of a moderate degree of fullness, raised at Newtownards Nursery. Shown by Messrs. PAUL & SON, The Old Nurseries, Cheshunt.

Carnation America.—A tree variety, with salmon-rose-coloured flowers. From Messrs. PAUL & SON.

Carnation Mrs. Wellbore E. Ellis.—A flower with some resemblance in tint to *Uriah Pike*, full, and of good size. Shown by WELLBORE ELLIS, Esq., Hazelburne, Dorking.

Carnation Mrs. J. W. Lawson.—A deep cerise-coloured flower, full, and moderately large. No fragrance. Habit, dwarf and close. Shown by Messrs. HUGH LOW & CO., Enfield.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), A. H. Snee, Jeremiah Colman, W. Cobb, J. Jaques, A. Hislop, E. Hill, H. A. Tracy, T. Rockford, W. H. White, J. W. Potter, W. H. Young, H. J. Chapman, H. Little, Norman C. Cookson, H. Ballantine, H. M. Pollett, and De B. Crawshaw.

The show of Orchids was an interesting one.

Sir Trevor Lawrence, Bart., Burford (gr., Mr. W. H. White), exhibited a very remarkable group of good things, all bearing evidence of more than average good cultivation, many of the specimens being furnished with numerous flower-spikes. There were a plant of *Masdevallia macrura* with fifteen of its large and singular looking flowers; and *Cypripedium* × *onanthum* superbum with twelve spikes of finely coloured flowers, for both of which Cultural Commendations were awarded. Besides these, a fine specimen of *Habenaria militaris*, *Stenoglossis fimbriata* alba, a fine *Vanda Sanderiana* "Burford variety"; *Miltonia* × *Lamarckiana*, *Calanthe* × *labrosior*, a finely-flowered specimen of *Vanda Kimballiana*; the distinct *Cattleya Bowringiana* lilacina; *Laelia* × *Juvenilis*, *Dendrobium sanguinolentum*, *Cypripedium* × *Eno-superbiens*, C. × *radiosum*, C. × *Regale*, C. × *picturatum*, C. × *purpuratum*, C. × *Pollettianum* "Burford variety"; C. × *Morganiae*, *Angreum Leonis*, *Oncidium longipes*, *Masdevallia* × *Imogene*, and two fine new *Masdevallias* which secured awards. A Silver Flora Medal was voted for the group.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, were awarded a Silver-gilt Flora Medal for a splendid group that consisted principally of their fine hybrids. Prominent among them, as is usual at this season of the year, were the hybrids of *Laelia Perrini*, which were represented by many specimens of L.-C. × *Decia* (L. Perrini × C. aurea), and L.-C. × *Statteriana* (L. Perrini × C. labiata). Equal to these in showiness were the *Cattleya Bowringiana* hybrids represented by C. × Mrs. J. W. Whiteley (*Bowringiana* × *Hardyana*), and C. × *Mantini* (*Bowringiana* × *aurea*). Another interesting set well represented were the hybrids in which *Cattleya bicolor* was one of the parents. These comprised C. × *Fasciis* (*Aclandiae* × *bicolor* ?), *Laelio-Cattleya* × (C. *bicolor* × L. *crispata*), and one or two others, all bearing strong indication of C. *bicolor* in an elongated lip. Also in the group were *Laelio Cattleya* × *callistoglossa*, L.-C. × *Wellsiana*, L.-C. × *Pallas*; the fine *Cypripedium* × *Baron Schroder*, and other *Cypripediums*, *Cattleya aurea*, C. *labiata*, &c.

Messrs. HUGH LOW & CO., Bush Hill Park, Enfield, were awarded a Silver Banksian Medal for a group which consisted of *Cattleya Dowiana*, C. *labiata*, *Odontoglossum crispum*, a fine plant of *Cattleya* × *Maroni*, the almost white-flowered C. *Loddigesii* albens, *Oncidium Papilio*, *Laelio-Cattleya* × *intermedio-flava*, &c. (Silver Banksian Medal).

Jeremiah Colman, Esq., Gatton Park (gr., Mr. W. P. Bound), showed a small group in which were *Laelio-Cattleya* × *Henry Greenwood*, the showy *Laelia praestans gloriosa*, and the white lavender-tinted L. p. *Gatton Park* variety; *Cymbidium Tracynum*, *Lycaste Skinneri* alba, *Dendrobium Phalenopsis*, *Oncidium tigrinum*; *Zygopetalums* were likewise shown by Mr. Bound.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury (gr., Mr. J. Hudson), staged an effective stand of flower-spikes of varieties of *Cattleya labiata* and C. *aurea*, one of the latter being a grand variety, which has the greater part of its lip coloured of a rich orange. There was also shown a flower-spoke of a peculiar form of C. *Warszewiczii*, having rose coloured flowers, in which each segment has a broad white band running up the centre.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), showed a noble spike of a fine variety of *Dendrobium spectabile*.

Mrs. BRIGGS-BURY, Bank House, Accrington (gr., Mr. Wilkinson), sent *Cypripedium Queen Margherita*, a distinct variety imported with some plants of C. *Charlesworthii*, to which in form it has some resemblance. The petals and lip are of pale green, the dorsal sepal white, with a purple base.

Sir JAS. MILLER, Bart., Manderston, Duns, N.B. (gr., Mr. J. Hamilton), sent the finest form of *Cattleya* × Mrs. J. W. Whiteley (*Bowringiana* × *Hardyana*), proving it to be quite equal to C. × *Mantini*. The bright purplish-rose flowers were large and well formed, and with a fine clear orange disc to the lip; also C. × Miss Williams (*Gaskelliana* × *Harrisoniana*).

Messrs. CHARLESWORTH & CO., Heaton, Bradford, showed *Cattleya* × *Pandora* (C. *bicolor* × *Trianae*), the handsomest of the C. *bicolor* crosses. Flowers light rose, with a crimson-purple lip.

Mr. A. J. KEELING, Cottingley, Bingley, sent the pure white *Pleione maculata alba*.

Mr. JAS. DOUGLAS, Edenside Nurseries, Great Bookham, showed *Laelio-Cattleya* × *Gottoiana*, home-raised (L. *tenebrosa* × C. *labiata* Warneri).

D. M. GRIMSDALE, Esq., Kent Lodge, Uxbridge (gr., Mr. Hooker), showed a fine rich yellow form of *Odontoglossum Londesboroughianum*.

Messrs. F. SANDER & CO., St. Albans, staged a group of hybrid *Cypripediums* and other Orchids, the most noteworthy of which was *Laelia* × *Gemma* (*crispata* × *Dayana*), a very pretty rose-coloured flower, with rich claret-purple front to the lip, which had white markings at the base.

Awards.

Cypripedium × *Dora Crouchaw* (*bellatulum* × *Charlesworthii* mosaicum), from Messrs. CHARLESWORTH & CO., Heaton, Bradford. A very fine and distinct hybrid, with novel features, the labellum bearing strong indication of C. *Charlesworthii*, and the broad petals being extended on each side of it, giving the flower a most striking appearance. The fine substance and size of the flower is well known in all C. *bellatulum* hybrids. In this case the greater part of the surface is of a purplish-rose colour, beautifully displayed in lines and veining of small spots merged together by a uniform tinge of colour (First-class Certificate).

Cypripedium × *Mandiac* (*callosum* *Sanderæ* × *Lawrenceanum* *Hyeannum*), from HARRY WORTHINGTON, Esq., Whalley Range, Manchester. The foliage and form of the flower of this plant were quite intermediate between the parents, the colour being similar to both parents, viz., emerald-green and white. The Certificate was subsequently withdrawn, in accordance with the rules of the Society that a painting shall be made of certificated flowers. The flower being fertilised, it could not be spared to comply with the rule.

Laelia praestans gloriosa, from JEREMIAH COLMAN, Esq., Gatton (gr., Mr. W. P. Bound). A very richly coloured flower. Sepals and petals bright purplish-rose; front of lip claret colour (Award of Merit).

Zygocotax × *Veitchi Kromeri* (Z. *crinitum* × C. *jugosus*), from Mr. ED. KROMER, Roraina Nursery, Bandon Hill, Croydon.—The garden hybrid was raised by Messrs. Jas. Veitch & Sons, and flowered in 1887. This is a natural hybrid imported from Brazil, and is of strong habit. Sepals and petals emerald-green spotted purple. Lip white, beautifully ornamented with violet lines (Award of Merit).

Masdevallia × *Bocking hybrid* (*occulata* × *Veitchi* ?), from Sir Trevor Lawrence, Bart., Burford (gr., Mr. W. H. White).—A very handsome hybrid raised by the late Sydney Courttauld, Esq. The stout scape bears a prominent bract and one large flower with a considerable resemblance to M. *occulata* in form; in colour it is bright Indian-red, with clear yellow centre. It is a very distinct and pretty hybrid (Award of Merit).

Ansellia humilis, from Sir Trevor Lawrence, Bart., Burford (gr., Mr. W. H. White).—A distinct, very dwarf species, with comparatively large yellow flowers blotched with red-brown (Botanical Certificate).

Masdevallia Burfordiensis, from Sir Trevor Lawrence, Bart. (gr., Mr. W. H. White).—A singular and distinct species provisionally named. Leaves fleshy. Flowers of the same class as M. *Mooreana*, but larger, and of thinner texture. Ground colour white, but the greater part of the surface dotted and tinged with claret colour. Petals white with purple lobes, lip rather large, purple. One of Mr. Lehmann's discoveries (Botanical Certificate).

Fruit and Vegetable Committee.

Present: J. Cheal, Esq. (in the Chair); and Messrs. H. Esling, A. Dean, S. Mortimer, C. Herrin, H. Markham, G. Wythes, G. Woodward, J. Smith, F. Q. Lane, G. Reynolds, G. Kelf, G. T. Miles, H. Balderson, and W. H. Divers.

Fruit was shown rather abundantly in consequence of the attraction afforded by the Sherwood Silver Cups, which went to the winning competitors. The whole of the competing collections were of sterling merit. The number of dishes required were eighteen cooking, and twelve dessert Apples, eighteen dessert and six cooking Pears. The 1st prize fell almost as a matter of right to the veteran exhibitor, Mr. G. Woodward, gr. to Major WARD, Barham Court, Maidstone. His Apples were of extraordinary size, and faultless in appearance. We may instance *Golden Noble*, *Annie Elizabeth*, *Newton Wonder*, *New Hawthornden*, *Belle du Bois*, *The Queen*, *Mère de Ménage*, *Peasgood's Nonsuch*, *Bismarck*, *Tyler's Kernel*, *Beauty of Kent*, and *Alexander*. The high colour of most was very marked. His finest dessert varieties of Pears were *Pitmaston Duchess*, just at perfection; *Passe Crassane*, extremely large fruits, which the exhibitor stated were of fine flavour; *Durondeau*, *Beurré Baltet*, B. *Diel*,

Magnate, President d'Ormondville, Glout Moreau. His culinary Pears were Reine des Tardives, Uvedale's St. Germain, Catillac, Beurre Clargé, Vicar of Winkfield, Triomphe de Jodoigne, none of which was of extra large size. Dessert fruits included fine Cox's Orange Pippin, Allington, and other select varieties. 2nd, Mr. A. J. Thomas, Roimer ham, Sittingbourne. The fruit in this collection was smaller in most instances, and less well finished. His best Pears were Pitmasdon Duchess, Beurre Lamoignon, a vividly coloured variety; Lieut. Pochevin, like a high coloured Duchess d'Angoulême; Columbia, not so ripe as in Mr. Woodward's fruit of this American novelty. Beurre Superfin, B. Six, B. Fouquieray, Le Lecter, Doyenne du Comice, Madame Lye Ballet, Marechal de la Cour; his cooking varieties were Bellissime d'Hiver, Beurre Clargé, St. Germain, Catillac, Baile de Thouars, and Vicar of Winkfield. 3rd (equal), Sir MARCUS SAMUEL, Mote Park, Maidstone (gr., Mr. W. H. Bacon). He had good average examples, the finest of which in culinary Apples were Peasgood's Nonsuch, Twenty Ounce, Bedfordshire Foundling, Sandringham, Harvey's Wiltshire Defiance, Warner's King; in Pears: Chaumontelle, Hacon's Incomparable, Zepherine Greigee, Doyenne du Comice, Beurre Ballet Pere, and Pitmasdon Duchess were the finest. 3rd (equal), A. H. SMEE, Esq., The Grange, Hackwood (gr., Mr. W. E. Humphrey). The collection was extremely near to the previous one in most points. The finest shown were Peasgood's Nonsuch, Blenheim Orange Pippin, Spencer's Favourite, Bismarck, Lewis' Incomparable, Prince Albert, Lord Derby, Tibbett's Pearmain, Wealthy, and Cornish Gilliflower. Fine dishes of Pears were noted of Beurre Bachelier, Duc de Nemours, Marie Louise, Glout Moreau, Chaumontelle, and Beurre Easter.

The Marquis of HUNTING, Orton Hall, Peterborough, received a Vote of Thanks for specimens of the Forelle Pear. Pears included the "Popham," a fine large yellow fruit, of nice form and appearance.

A dish of the Salway Peach came from Mr. MARCHAM, Englefield Green.

The Duke of RUTLAND, Belvoir Castle (gr., Mr. W. H. Divers), showed eighty dishes of Pears and Apples of very good appearance for a garden so far north, and in the case of Apples of naturally high colour, the tints were well brought out; as for example in Gascoyne's Seedling, Baumann's Red Reinette, Winter-striped Pearmain, Cox's Pomona, Emperor Alexander, Hollandbury, The Queen, Newton Wonder, &c. Some large fruits were noted of Annie Elizabeth, Pineapple, Alfriston, Bismarck, Dendry's Seedling, Warner's King, Sandringham, Peasgood's Nonsuch, Lane's Prince Albert, and Tower of Glamis. His finest Pears were Beurre Diel, Emilie d'Heyst, Marechal de la Cour, Louise Bonne, Marie Louise d'Uccle, Marie Louise, Beurre Hardy, Pitmasdon Duchess, B. Rance, Glout Moreau, and B. Superfin (Silver-gilt Knightian Medal).

Messrs. FEED & SON, Roupell Park Nurseries, W. Norwood, S.E., exhibited 100 dishes of Apples and Pears, receiving a Silver Banksian Medal. The fruit was of excellent quality, well coloured, and free from skin blemishes.

Messrs. PAUL & SON, Cheshunt, showed a number of plants of the St. Joseph Strawberry in abundant fruit, but none of it was ripe, and would scarcely ripen out of doors.

Mrs. NIX, Tilgate, Crawley, Sussex (gr., Mr. E. Neal), showed eighty dishes of fruit, and the Appley Towers and Lady Downes Seedling Grapes. The fruit was of average quality, and the exhibitor showed a new departure in the dish up, which he carried out with leaves of Ampelopsis Veitchi and of the Vine; and Crotons at long intervals occupied the backline (Silver-gilt Knightian Medal).

Numerous seedling Apples were shown, but none was accorded in Award.

Fruits of the early Apple, Chas. Ross, were shown by Messrs. W. HORNE & SONS, Cliffe, Rochester, in sound condition.

Miss EVANS, Forde Abbey, Chard (gr., Mr. J. Crook), showed four dishes of Plums and Pears, receiving a Cultural Commendation.

Messrs. H. LANE & SON, Berkhamsted, received a Cultural Commendation for Apples; and Mr. W. TAYLOR, Osborn Nurseries, Hampton, showed Grape Reine Olga, and other fruits, receiving a Cultural Commendation.

Chou de Brunswick, a Sauer-kraut variety, and resembling an agricultural Cabbage, was shown by Sir TREVOR LAWRENCE, Bart., M.P., Burford, Dorset.

Awards of Merit.

Melon Late Perfection.—A large oval fruit, with whitish-green flesh, of good flavour, and nicely netted rind. Shown by the Marquis of Bute, Cardiff Castle (gr., Mr. A. Pettigrew).

Parsley, Dobbie's Selected.—An excellent dwarf, close-growing variety. Shown by Messrs. DOBBIE & CO., Rothesay, N.B., and Orpington, Kent.

The Lecture.

THE CURRANT-BUD MITE.

In the afternoon a lecture on the Currant bud mite was given by Mr. Newstead, the Curator of the Grosvenor Museum, Chester. Mr. Newstead alluded to the first notice of the insect in the columns of the *Gardeners' Chronicle*, by Prof. Westwood, in 1869, p. 841, August 7. The life-history of the insect, so far as known, was sketched, and the various means adopted for its extermination were alluded to. The experiments made at the Fruit Farm at Ridgmont were also referred to. Unfortunately no means had as yet been found of destroying the insect, which would not at the same time be injurious to the bush. Various points in the

life-history of the creature require to be known before any satisfactory remedy can be applied. In the discussion which followed, Mr. Wilks, Mr. A. Dean, Prof. Henslow, Mr. L. Castle, and others took part.

PARIS EXHIBITION.

THE Chrysanthemum Conference, held on October 31, was highly successful and interesting, although not more so than the ordinary annual shows. The habitual exhibitors staged fine lots. Messrs. WELLS & CO., of Earlswood, Surrey, were as usual, to the fore with fine potted specimens and large blooms. The firm VILMORIN, ANDRIEU & CIE, had some interesting and varied novelties; as had also M. NOLIN, among whose exhibits were Sada Yaeo, a fine greenish-white Japanese sort, quite informal; Vieux Paris, rose and mahogany, very full and gaudy; Fin de Siècle, a good Japanese variety, and Madame Coran.

The special exhibition drew many visitors, but the chief success was achieved by the wonderful Japanese Chrysanthemums. These, as is customary, had been prepared for months previously by the native grower, M. Foukoubu, gr. to the Emperor of Japan, and all wished to see plants of which they had heard so much. The Japanese do not endeavour, like European growers, to produce enormous blossoms, but rather much-branched plants, with many stems, each bearing one flower, and all formally trained somewhat, as are the Azaleas in Belgium, that are so well known at the Ghent great quinquennials.

Some of the plants shown on November 3 at the Trocadero in the Japanese section had from 200 to 230 stems on one plant, and as the specimens had arrived from Japan at the end of winter in bad condition they gave but a poor idea of what they would have been in their own country. Illustrations of Japanese grown Chrysanthemums have previously appeared in the *Gardeners' Chronicle*.

In spite of all drawbacks, the Japanese section was a great success for M. Foukoubu, who is already known in Europe, having passed through a course of instruction at the Versailles School of Horticulture.

M. Millerand, Ministre du Commerce, visited the Japanese tent, and one of the finest Chrysanthemums was presented to Madame Millerand. Other curious and beautiful exhibits were offered to Madame Loubet, M. Viger, and other distinguished visitors.

SCOTTISH HORTICULTURAL ASSOCIATION.

THE usual monthly meeting of this body was held at St. Andrews Hall, Edinburgh, on Tuesday evening, November 6, 1900. There was a large attendance. Mr. Todd, Vice-President, occupied the Chair.

In the absence of Mr. D. Dewar, Botanic Gardens, Glasgow, who, through indisposition, was prevented from being present, Mr. Waldie Lamont, Murchiston, read a paper entitled—"Advice to Beginners on the Feeding of Japanese Chrysanthemums for Exhibition Bloom." In the course of his remarks, Mr. Lamont strongly advised too much rather than too little feeding if they wished for ideal blooms—a point which was warmly discussed by several of the members present.

The exhibits for the evening included the following: two fine plants of Chrysanthemum Mrs. Barkley and Mrs. Combes from Mr. WALDIE LAMONT; and a vase of fine mixed Roses from Mr. Todd, Musselburgh, some Dutch Cabbages, &c. Two life-members and twenty-three members were added to the roll of the Association.

A hearty vote of thanks was accorded to Mr. Waldie Lamont for his able and eloquent paper.

PORTSMOUTH CHRYSANTHEMUM.

OCTOBER 31, NOVEMBER 1.—The annual autumn exhibition held in the Engineers' Drill Hall on the above dates was a success, the whole of the space at disposal being fully occupied. The President, MARK M. GILL, Esq., was deeply interested in all details of the show; and the Secretary, Mr. W. H. BERRY, secured the smooth working of all that is necessary to ensure success.

Cut blooms were numerous and good. The principal class was that for forty-eight in thirty-six varieties, half incurved, and half Japanese. Mr. G. H. HUNT, gr. to PANTIA RALLI, Esq., Ashstead Park, Epsom, won the leading award with somewhat small blooms, but possessing much quality and freshness. The leading varieties were Pride of Madford, E. Molyneux, Mrs. W. Mease, M. Louis Remy, Mr. T. Carrington, Mutual Friend, Lord Ludlow, and Soleil d'Octobre in the Japanese section. Incurved varieties were best represented by John Doughty, Miss M. A. Haggas, Princess of Wales, C. H. Curtis, and Globe d'Or. Mr. G. Hall, gr. to Lady LOUISA ASHBURTON, Melchet Court, Romsey, was a good 2nd Japanese varieties in twelve vases, three of each, were capitally staged, the specimens being of large size, possessing much quality and freshness. Mr. HUNT was again successful, winning easily. Mr. C. PENFORD was a creditable 2nd.

Growers in Portsea Island were well provided for by numerous classes and substantial prizes. Mr. W. G. ADAMS, 89, Clarendon Road, Southsea, won the premier place for two dozen Japanese blooms, and the same number of incurved in separate classes.

For one dozen Japanese blooms, Mr. Steptoe, gr. to T. WILLIAMS, Esq., Queen's Crescent, Southsea, won 1st place with richly-coloured examples of popular varieties.

With twelve incurveds, Mr. WHITE, 6, Garden Terrace, Southsea, was an easy 1st prize winner.

Amateurs staged some good blooms in the several classes set apart for them. By far the best exhibit was that of Mr. H. H. LEE, 51, Cedar Road, Southampton, who easily won the premier award for twelve Japanese varieties.

Plants do not call for any special comment except, perhaps, the group of Chrysanthemums interspersed with foliage plants from Sir W. PINK, Shrover Hall, Cosham (gr., Mr. W. Cheator).

NOTICE.—Owing to the great pressure on our space, many reports of Societies, including a good one held at Birmingham, are being held over till next week.

GARDENING APPOINTMENTS.

MR. H. STARKIE, late Foreman in the gardens at Ingress Abbey, Greenhithe, Kent, as Gardener to C. EMMOTT, Esq., Inglemere Wood, Ascot, Berks.

MR. G. DURRANT, for the last three years engaged as Foreman under Mr. J. FLEMING, in the Gardens at Wexham Park, Slough, as Head Gardener to HUBSON KEARLEY, Esq., M.P., Wittington Hall, Marlow, Bucks.

MR. W. BUTLER, until lately Foreman in The Gardens, Vale Royal, and previously with Mr. BASTEN, Gardener at Buscot Park, as Head Gardener to the Right Hon. Lord DELAMERE, Vale Royal, Hartford, Cheshire.

MARKETS.

COVENT GARDEN, NOVEMBER 8.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	5 0-7 0	Ferns, small, per	100
Arbor-vita, var., doz.	6 0-36 0	100	4 0-6 0
Aspidistras, p. doz.	18 0-36 0	Ficus elastica, each	1 6-7 6
— specimen, each	5 0-10 0	Foliage plants, var.,	
Cannas, per dozen	18 0	each	1 0-5 0
Crotons, per doz.	18 0-30 0	Lily of Valley, each	1 9-3 0
Cyclamen, per doz.	8 0-10 0	Lycopodiums, doz.	8 0-4 0
Dracenas, var., per		Marguerites, per	
dozen	12 0-30 0	dozen	8 0-12 0
— viridis, per doz.	9 0-18 0	Myrtles, per dozen	6 0-9 0
Ericas, var., per doz.	12 0-36 0	Palms, various, ea.	1 0-15 0
Erythras, various, per		— specimens, each	21 0-63 0
dozen	6 0-18 0	Pelargoniums, scar-	
Evergreens, var.,		let, per dozen	8 0-12 0
per dozen	4 0-18 0	— Ivyleaf, per doz.	8 0-10 0
Ferns, in variety,		Spiraeas, per dozen	6 0-12 0
per dozen	4 0-18 0		

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asparagus "Fern,"		Lily of Valley, per	
bunch	1 0-2 0	doz. bunches	9 0-15 0
Carnations, per doz.		Maidenhair Fern,	
bunches	1 0-2 0	per doz. bunches	4 0-8 0
Cattleyas, per dozen	9 0-12 0	Marguerites, p. doz.	
Encharis, per dozen	2 0-4 0	bunches	2 0-4 0
Gardenias, per doz.		Mignonette, doz. bun.	4 0-6 0
spikes	1 6-2 6	Odontoglossums, per	
Gladioli, scarlet,		dozen	4 0-8 0
per dozen	2 6-5 0	Roses, Red, per doz.	1 0-3 0
Lilium Harrisii, per		— Tea, white, per	
dozen blossoms	4 0-6 0	dozen	1 0-3 0
Lilium lancifolium		— Safrano, per	
album, per dozen	1 6-3 0	dozen	1 0-3 0
Lilium rubrum, per		— Catherine Mer-	
dozen	3 0-5 0	met, per dozen	2 0-4 0
Lilium longiflorum,		Smilax, per bunch	3 0-5 0
per dozen	4 0-6 0	Tuberose, per doz.	
		blossoms	0 4-0 6

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, English,		Grapes, Almeira, in	
per bushel—		barrels	12 0-16 0
cookers, large	3 6-4 6	Lemons, case	14 0-16 0
various	1 6-3 0	Lychees, new, pkt.	1 0
Cox's, in sieves	3 0—	Medlars, case	3 6-10 0
Kings, bush	3 6-4 6	— in sieve, home	
Blenheims, bush	3 6-4 6	grown	3 0
Ribbons, bush	4 6-7 6	Melons, each	1 0-2 0
Bananas, bunch	5 0-9 0	Oranges, Jamaica,	
— loose, per doz.	1 0-1 6	per case (200)	7 0
Blackberries, per		— Tenerife, case	4 0-9 0
peck	1 6-2 0	— Malaga	16 0
Cobnuts, lb.	0 4-0 5	Peaches, per doz.	6 0-12 0
Cranberries, case	12 6	Pears, home grown	3 0-4 0
— quart	0 6	— stewing, case	6 6-8 6
— Russian Kegs	1 9	— in basket	2 0-2 6
Chestnuts, per bag	10 6-14 0	— French, Comice,	
— Italian	17 0-21 0	&c., in crates	5 0-8 0
Figs, Italian, basket	1 9-3 0	Persimmons or Kaki,	
Grapes, Hamburgh,		per doz.	1 6-2 6
per lb.	0 6-1 0	Pines, each	2 6-4 0
— Alicante	0 7-1 3	Prunes in sieve	2 6-3 0
— Colmar	0 8-1 0	Quinces, per sieve	2 6
— Gros Maroc	0 9-1 0	Walnuts, Grenoble,	
— Muscats, A, lb.	2 6-3 6	per bag	6 0-7 6
— Muscats, B,		— in bags, large	10 0-15 0
per lb.	1 0-2 0		

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	4 6	Lettuce, English Cos, per score	1 0-2 0
— Jerusalem, sieve	1 3-1 6	Mint, per doz.	1 6 —
Beans, dwf. Ma leira, per bkt.	3 0-4 0	Mushrooms, house, per lb.	0 8-0 9
— Ch. Islds. dwf., new, per lb.	0 8 —	— outdoor, per lb.	0 3-0 6
Beetroot, bushel	1 0-1 3	Onions, picklers, per sieve	3 0 —
Beet, per dozen	0 6 —	— per bag	3 0-3 6
Brussel Sprouts, per sieve	1 0-1 9	— cases	6 0-6 6
Cabbage, tatty	1 6-2 6	— English, p. cwt.	4 0-4 6
— dozen	0 6 —	bag	1 0 —
Carrots, new, dozen	1 6 —	Parsley, 12 bunches	0 9-1 0
— washed, in cwt. bags	2 0-2 6	Parsnips, in cwt. bags	2 6 —
Cauliflowers, per dz.	1 0-2 0	Potatoes, per ton	75 0 95 0
— tatty	4 0-7 0	Radishes, 12 bches.	1 0-1 6
Celery, per dozen	1 6 —	Salad, small, punnets, per dozen	1 3 —
Celery, doz. bunds.	10 0-14 0	Shallots, new, p. lb.	0 3 —
Chicory, per lb.	0 4 —	Spinach, per sieve	0 6 —
Cress, doz. punnets	1 6 —	— bushel	1 0 —
Cucumbers, doz.	2 0-4 0	Tomatoes, English, new, per 12 lb.	4 0-6 0
Eradive, new French, per dozen	1 3 —	— Channel Islands, per lb.	0 3-0 4
— English, score	1 0 —	— French, crates	4 0-4 6
Garlic, new, lb.	0 3 ½	— Canary deeps	3 0-4 6
Horseradish, English, bundle	1 6-2 0	Turnips, per dozen	1 6-2 0
— foreign, p. bdle.	1 0-1 3	— in bags	2 0-2 6
Leeks, per dozen	1 6 —	Watercress, p. doz.	0 4-0 6
Lettuce, French	1 0 —		
Cabbage, doz.	1 0 —		

REMARKS.—Trade all round is quiet, and prices much the same as last week. There are on sale Avocado Pears at 8s., Mangoes at 2s., and Custard Apples at 6s. per dozen, as well as some very good home-grown Quinces; also Medlars. Prune-Plums still continue to arrive in good condition.

POTATOES.

Potatoes: Various sorts, 75s. to 95s. per ton; foreign bags, 50 kilo., 2s. 9d. to 3s. 9d. John Bath, 32 & 34, Wellington Street, Covent Garden.

CORN.

AVERAGE PRICES OF BRITISH CORN (per imperial qr.), for the week ending November 3, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

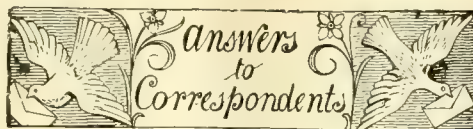
Description.	1899.	1900.	Difference.
	s. d.	s. d.	s. d.
Wheat	27 2	27 5	+ 0 3
Berley	27 2	26 3	- 0 11
Oats	16 7	16 11	+ 0 4



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period October 28 to November 3, 1900. Height above sea-level 24 feet.

1900.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			
		At 9 A.M.		DAY.		At 1-foot deep.		At 2-foot deep.	
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.	LOWEST TEMPERATURE ON GRASS.
		Deg.	Deg.	Deg.	Deg.	Ins.	Deg.	Deg.	Deg.
OCTOBER 28 TO NOVEMBER 3.									
SUN. 28	W.S.W.	42° 5'	40° 8'	55° 6'	34° 5'	0 20	46° 5'	51° 7'	53° 9'
MON. 29	W.	53° 2'	48° 8'	54° 4'	42° 3'	0 50	49° 2'	51° 3'	53° 4'
TUES. 30	W.N.W.	47° 7'	47° 2'	58° 1'	45° 8'	0 08	49° 2'	51° 5'	53° 4'
WED. 31	S.S.W.	57° 9'	56° 8'	64° 7'	47° 5'	0 03	50° 3'	51° 7'	53° 4'
THU. 1	S.S.E.	56° 9'	56° 1'	61° 7'	51° 5'	0 03	51° 9'	52° 0'	53° 4'
FRI. 2	N.W.	54° 7'	53° 6'	66° 4'	52° 3'	...	53° 1'	52° 5'	53° 2'
SAT. 3	N.E.	52° 8'	51° 6'	66° 2'	51° 4'	...	52° 9'	52° 9'	53° 2'
MEANS...		52° 2'	50° 7'	58° 2'	46° 5'	0 84	50° 4'	51° 9'	53° 5'
					Tot.				

Remarks.—Wet, mild weather has prevailed during the past week, Wednesday and Thursday being exceptionally mild for the time of year. Rain fell on five days.



BOOKS: *J. T.* We do not publish any gardeners' dictionary, and we do not know of any such work sold at the price that you mention. An edition of *Johnson's Gardeners' Dictionary* has been recently published by Messrs. Geo. Bell & Sons, York Street, Covent Garden, W.C., which might be found of use.

EUPHARIS BULBS: *C. J. V.* Re-pot, washing the bulbs before re-potting, and placing them in small pots in turfy loam only. Place in a slight bottom-heat, and pot on when growing freely.

MARKET REPORTS OF SHEFFIELD AND MANCHESTER: *A. Mayne.* Some of the larger local journals published in these cities would afford the desired information.

NAMES OF FRUITS: *We are most desirous to oblige our correspondents as far as we can consistently with our editorial work, but as the naming entails much labour and considerable cost, we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay is often unavoidable.*

A. B. 1, Tower of Glamis; 2, fine examples of Nelson Codlin; the Pear is Maréchal de la Cour. —*Enfield.* Thanks for the particulars as to the form of trees, where growing, &c. Such details often help considerably, though few correspondents trouble to furnish them, and the majority give no information whatever.—1, Sinclair; 2, rotten and smashed; 3, Beurré Superfin; 4, Besi de la Motte; 5, Beurré Moiré; 6, Doyenné Sieulle. You have exceeded the number allowed, and the remainder will be given next week.—*Winton.* 1, General Todleben; 2, Besi d'Esperen; 3, Triomphe de Jodoigne; 4, Brown Beurré; 5, Beurré Bosc; 6, Leopold I.—*J. E. P.* Fine examples of Royal Russet.—*S. B.* 1, Casteline; 2, Deux Sœurs; 3, Dumelow's Seedling; 4, Cockle Pippin.—*M.* 1, Scarlet Tiffing; 2, Tom Putt; 3, Calville Maline.—*A. S. W.* Louise Bonne of Jersey.—*J. M. S.* 1, Beurré Burnice; 2, B. Bronzé. *W. F. B.* 1, Beurré Diel; 2, Golden Ducat; 3, unknown—and if the specimen sent is a fair example its place might be taken by a very much better variety either for cooking or dessert.—*M. R.* 1, Ribston Pippin; 2, Golden Spire; 3, Dumelow's seedling is the correct name; it is also known as Normanton Wonder and Wellington.—*D. C.* Woodstock Pippin is merely a synonym of Blenheim Pippin, or Blenheim Orange, as it is correctly termed.—Your Apple is not that variety; it is Harvey's Wiltshire Defiance.—*P. T. R.* 1, Beurré Diel; 2, Doyenné du Comice; 3, Marie Louise; 4, Brown Beurré.—*W. W.* 1, A fine example of Cox's Orange Pippin; 2, Scarlet Nonpareil; 3, Cox's Pomona.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*A. F. F.* Ampelepis Veitchi var. purpurea.—*A. O.* *Penshurst.* Known in gardens as Bambusa Fortunei variegata.—*A. S.* *Putney.* Dendrobium strongylanthum.—*J. D.* Epidendrum ciliare.—*J. E. H.* 1, Phyllocactus Ackermannii; 2, Dracæna congesta; 3, Fuchsia Cloth of Gold; 4, Begonia metallica; 5, Eucharis amazonica; 6, Begonia semperflorens.—*E. V. B.* Tydæa formosa and Vittadenia australis, which is commonly known in gardens as Vittadenia triloba.—*X.* 1, Codæum (Croton) Queen Victoria; 2, C. Evansianus; 3, C. Mrs. Swan; 4, C. Laingi; 5, C. variegatum; 6, C. superbum.

ODONTOGLOSSUMS UNSATISFACTORY: *A. O.* *Penshurst.* The appearance of the leaves and spike of Odontoglossums seem to indicate that something must have been used in watering the plants which has injured the roots, and caused collapse of the leaf tissues. If anyone had been giving them chemical manures in the water, such appearances might result. We have seen similar damage done where tar or paint has been used to colour the hot-water pipes. A freshly painted house kept close might cause some damage of this

nature, but one having the plants in his care, ought to be able to form some opinion about it. Better turn the plants out, wash the roots, and pot into small pots in peat and sphagnum-moss, and start afresh.

PERFORATED PINE BUDS: *F., S., & S.* The appearance of the buds point to the injury that is caused by the caterpillar of the Pine-bud Tortrix Moth, or the Pine-shoot Moth. A few chrysalids fell out of the buds. Trees in a nursery might be syringed with petroleum emulsion or soap-suds, in which tobacco-liquor is mixed, so as to coat the buds and make them distasteful to the moth.

SCALE INSECTS: *Young Gardener.* The names of the scale insects are:—1, Fiorinia florinae (on Kentia Palm); 2, Aspidiotus ostreaeformis (on Plum); 3, Diaspis Boisduvali (on Orchid-leaf).

SURFACE-SOIL AND SUBSOIL OF A GARDEN: *M. J. W.* The samples of soils sent for our inspection show a poor, inert, infertile sort, with which it is not possible to do much with manure, or by deep-trenching. If it be wet, underground drains would improve its texture and fertility, and ensure its aeration. Liming before digging, and the application of potash in other years when no liming is done, would be of use to growing crops, if applied at the rate of 2 oz. per square yard at the growing season, twice or thrice at monthly intervals. Crushed bones dug in during winter, and bone-meal applied in the summer, would increase the fertility of the soil. Do not make use of much stable-manure except at the bottom of the trenches, for it may be bastard-trenched, i.e., the top-spit, and the loose crumbs at the bottom of each trench may be dug, and shovelled up respectively, the hard soil at the bottoms of the trenches being dug, and left where it is. Well-decayed farmyard—or better, cow-manure only—would suit the soil admirably, and if an occasional dressing of pasture-loam could be afforded, or trimmings of the roadsides, ditch-scurings, charred garden-refuse, applied to plots as they become vacant, before being dug, still further good would accrue. It may be safe after the lapse of six years of bastard-trenching to fetch up the subsoil, and expose it to the air, afterwards incorporating it with the upper layer. A depth of 2 to 3 inches would suffice at any one time. It is a soil that would soon give out in hot weather, and one in which all sorts of crops, young fruit-trees and bedding-plants, need mulches of some kind or other.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT INSTITUTION: *J. T.* The secretary is Mr. W. Collins, of 9, Martindale Road, Balham, S.W.

VINE DRESSING: *R. J.* We have asked Mr. Chapman which kind of tar was meant.

WHITE FLY ON TOMATO PLANTS: *White Fly.* Repeated vaporising or fumigating at short intervals of time with the compounds that you have tried and found of good service, will exterminate the pests; you need not then trouble about the destruction of the eggs.

COMMUNICATIONS RECEIVED.—*H. R.*—*F. W. B.*—*W. T. H.*—*W. C. Leach.*—*W. E. Boyce.*—Messrs. Herd Brothers—*W. D.*—*T. H.*, yes, Bipalmul kewense—*T. H. O. P.*—*Dr. S.*—*Zurich*—*Comte de K.*—*W. F.*, Vancouver—*G. C.*—*W. J. G.*—*C. B.*, Brussels.—*Gardener.*—*H. J. E.*—*J. B. S.*—*E. L. C.*—*W. S.*—*T. H.*—*T. H. O. P.*—*H. B.*—*H. S.*—*W. Sturt.*—*A. & B.*—*E. M.*—*A. H.*—*H. M.*—*W. C. L.*—*J. B.*—*E. S.*—*E. C.*—*J. E. T.*—*Wild Rose.*—*E. J.*—*W. H. M.*—*Oakes*—*Ames.*—*K. Dinter.*—*J. S.*—*C. W. D.*—*A. C. B.*—*W. M.*—*B.*—*J. W.*—*D.*—*Hillfield.*—*Simmons.*—*A. K.*—*W. T.*—*C. R.*, Mitchelstown—*X. Y. Z.*—*G. W. R.*—*G. Brown.*—*A. J. C.*—*H. MacDermott.*—*J. B.*—*E. T.*—*H. B. E.*—*F. R. T.*—*A. Hope.*—*S. Kerr.*—*S. Hardwick.*—*J. H. H.*

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—*S. W. F.*, letter will follow in a few days.

DIED.—We regret to announce the death of John Jones, of Coton Hill Nursery, Shrewsbury, on October 26, at the age of sixty-eight years.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



ROSE-CULTURE IN THE NURSERY OF MESSRS. SOUPERT & NOTTING, LUXEMBURG.
(SOUVENIR DE PIERRE NOTTING.)

THE

Gardeners' Chronicle

No. 725.—SATURDAY, NOV. 17, 1900.

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HERBACEOUS PLANTS.

HARDY or perennial herbaceous plants are those plants which possess the power of living for a number of years in our temperate climate, of resisting the winter's inclemencies of cold and lack of sufficient light. This they do by storing up nourishment, in the form of starch or other substances, in those subterranean portions of themselves which we term rhizomes and roots. Bulbous plants I here leave out of account, as they have been treated of in a former article. The plant passes into a state of hibernation, and probably of complete rest, and is comparable in this state, and in this respect, to the embryo in a dormant seed. The food substances which have been stored up through the agency of the leaves and roots during the previous summer are not used by the plant for its own keep and sustenance through the wintry period, for hibernating organisms never require food, seeing that very little waste of the tissues by respiration, &c., or possibly none at all, takes place during that period. The store of material is accumulated in order to enable the plant, on the return of spring, to send up a new sub-aerial axis or stem, and to form fresh leaves thereon, so that the work of assimilation may once again proceed apace, and flowers and fruit be formed. And

it is characteristic of these plants that after the flowering period is over, they may continue to vegetate vigorously, and it is at such a time more especially that they lay up, through the agency of their leaves, their reservoirs of nourishment for the succeeding year. During the first portion of the season's growth, the chief energy of the plant is concentrated on the production first of the flowers, the furnishing of whose, often brilliant, pigments and pollen grains must be a costly drain on the resources of the plant and of the fruit, the building up of whose seeds is possibly an even more expensive toil.

In order properly to understand the biology or life-history of a perennial herbaceous plant, we must trace (exclusive of the embryonic or seed stage, which I need not here mention), four stages in its life:—(1) The period dating from its development from the seed, through the early seedling condition, and during the subsequent vegetative period, when the plant is gradually preparing for the attainment of that *sumum bonum* of its existence, the production of flowers. This period varies according to the kind of plant, and the season at which the seed is sown. Plants raised from seed sown in the spring, will, many of them, produce flowers the following year; those raised from autumn-sown seed often not until the second year thereafter. The reason of this is, that in both these cases the plants require an entire season of growth in order to store up energy in the form of food-substances in their stems and rhizomes, before they can evolve their flowers. The offspring of autumn-sown, and of spring-sown seed, are alike in the fact that they thus both require the whole of the succeeding summer and autumn season to elapse before flowering. Exceptions and variations, of course, occur dependable on the special idiosyncrasies of plants; much will also depend on the conditions under which the seed is sown. This early pre-florescent period may, in some tropical plants, as the Giant Aroid, *Amorphophallus*, and the American Aloe, cover scores of years. (2) The flowering and fruiting period, the most important of all. (3) The second vegetative period, when the rhizome puts forth fresh shoots on which new leaves are borne; during this period very vigorous growth may occur for several weeks, especially if the late summer or autumn is a wet one. Yet, even if perfectly free from rain, the ground is, during September, very heavily bedewed at night, which must be a most beneficent factor for vegetation at this season; if, at the same time, there is a fair amount of bright sunshine, the leaves will be enabled to manufacture a store of starch for next season's use. (4) The hibernating or winter period, when all life, as we know it, is in abeyance. I believe that hibernation, or, at least, a certain amount of rest, is *per se* essential to a plant quite apart from the necessity of assuming that state owing to the compulsion of the environment; there must, I think, of necessity be a rhythmic, a cyclic alternation of rest and activity as an inherent law of organic nature. This hibernation or rest may be, however, considerably modified by the external conditions, such as the climate, and the kind of habitat. Our hardy perennials doubtless prefer a winter of uniformly cold temperature, with the ground coated with a thick layer of snow to keep out the severe frost. A dry air, too, is a boon at this season of the year, for much wet is liable to cause rotting of the half-alive or dormant roots and rhizomes in the ground; and further, a soaked soil succeeded by frost is, as everyone knows, the worst state of things possible for the plants. The action of

frost upon comparatively dry tissues is generally harmless; it is only when the element of moisture supervenes that danger is nigh. A winter, such as is all too frequent in these islands, made up of alternate spells of frosty and mild weather, I conceive to be the most unhealthy and baneful for plants, for which seasons their rest is continually being disturbed. They are roused for a short time into a state of unnatural activity, some spring plants even going the length of bursting into bloom, and many into leaf, only to be plunged again shortly into an atmosphere of frost which, acting on their newly-formed sappy tissues, kills off these once more. Such conditions as these prevailing during the nominally dormant season are highly deleterious, because these constant and irregular promptings into more or less active life must cause a drain on the vital powers of the plant, besides exhausting its stores of food. On the other hand, a uniformly undisturbed rest throughout the winter would enable the plant to preserve all its energy and food-stores for a deliberate and vigorous start into life when the proper season came.

These four seasons of life will be characteristic in a general way of hardy herbaceous plants. Variations from the rule above laid down occur, of course, in plenty. Many plants vegetate freely, while at the same time flowering profusely. Some, again, flower ceaselessly right through the whole summer and autumn; others bloom so late in the season as to leave no time for a succeeding vegetative period, but this, of course, matters not, the briefer length of the second vegetative period being compensated for by the greater length of the first one. *W. C. W.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

LYSIONOTUS CARNOSA.*

The genus *Lysionotus* (Gesneraceæ) was founded by David Don in 1822 on an Indian species, *L. ser-rata*, which was figured in the *Botanical Magazine*, t. 6538, in 1881. This plant was also published under the name of *L. ternifolia*. It was raised from seed sent to Kew by Mr. James Gammie, an old Kewite, who is now in our midst again after many years of distinguished service in the quinine factory of Bengal; but it apparently soon disappeared from cultivation. In 1874 Maximowicz described a Japanese species, which he named *L. pauciflora*, but not appropriately, because better specimens prove that it flowers profusely. Indeed, judging from dried specimens, *L. pauciflora* is the most ornamental species of the genus, and would be well worth introducing. There is a fragment in the Kew Herbarium, collected by Robert Fortune in the province of Chekiang in 1854; and it has since been found in various localities in China, from the extreme east to the extreme west of China proper. I myself described a second Chinese

* *Lysionotus carnosa*, Hemsl.—A specibus hactenus descriptis differt foliis ovatis basi rotundatis, calycis dentibus minoribus. Frutex vel suffrutix, ut videtur, nanus, fere undique glaber, ramis rectis viridibus, internodiis quam foliis paulo brevioribus. Folia terna, breviter petiolata, crassa, carnosa, ovata, 1½—2 poll. longa, obtusa, basi rotundata vel subcordata, pauciserrata, utrinque subnitida, subtus pallidiora, venis immersis obscurissimis. Pedunculi biflori, in axillis foliorum supremorum solitarii, quam folia breviores, bracteis bracteolisque minutis. Flores albo-lilacini, circiter 1½ poll. longi, duo superpositi, inferiore juniore; pedicelli 3—4 lin. longi. Calycis dentes minuti, crassi, inaequales, ovato-lanceolati, subobtus. Corollæ tubus leviter obliquus, sursum gradatim ampliatus, intus paulo infra labium anticum jugis 2 linearibus callosis instructus; limbus breviter bilabiat, labio postico bilobato, antico trilobato, lobis omnibus rotundatis. Stamina 2 antica tantum antherifera, inclusa, filamentis crassis apice supra antheras cornuti, antheris conniventibus; stamina 2 postica ad filamenta filiformia reducta. Ovarium cylindricum, glabrum, stylo inclusio. Capsula ignota.

species, *L. ophiorrhizifolia*, in vol. xxvi. of the *Journal of the Linnean Society*, from dried specimens sent to Kew by Dr. A. Henry; and two other Indian species of no special ornamental character have also been published. The species (*L. carnosa*) now under consideration, has been raised from seed both at Kew and by A. K. Bulley, Esq., of Neston, Cheshire, from seed sent by Dr. A. Henry. Too little is known yet to say anything about its horticultural value; but as already stated, *L. pauciflora* is probably a more ornamental plant. We have no information concerning the local conditions under which *L. carnosa* flourishes; but from the notes accompanying the dried specimens at Kew of the various species named above, it appears that they grow naturally in the clefts of rocks, in the forks of trees, and on old walls. I have not identified it with any dried specimens.

L. carnosa is apparently a dwarf shrub, glabrous in all its parts, with green, straight, rigid branches, and internodes rather shorter than the leaves. The leaves are in threes, shortly stalked, thick and fleshy, ovate in shape, and $1\frac{1}{2}$ to 2 inches long, with a few coarse teeth on the margin. The flowers are about $1\frac{1}{4}$ inch long, in shape like those of a small *Didymocarpus*; white, tinged with lilac, and borne in pairs in the axils of the upper leaves.

This description having been made from an imperfectly-developed plant, is doubtless open to modifications, especially in relation to dimensions, and probably in colour, as the flowers were produced in October. *W. Botting Hemsley.*

PASSIFLORA EUROPHYLLA, *Mast, sp. nov.*,
§ *Decaloba*.*

This is a species discovered in British Guiana by Mr. Im Thurn, and grown by Messrs. Sander, of St. Albans. It is distinguished by its very broad, oblong leaves, rounded at the base with two large glands, and two divergent triangular lobes at the apex, with a small intermediate lobule in the centre. The upper surface is dull green, the lower surface purplish. The flowers are whitish, and not specially attractive. *M. T. M.*

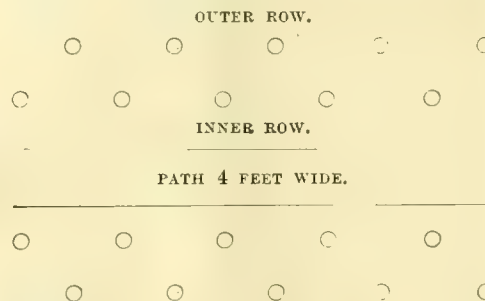
A NUT-WALK.

THERE are few more desirable additions to a garden than a nut-walk; and considering that it is so easily obtained, and that it combines both beauty and utility, it is surprising that it is not more common. Nuts will grow on almost any kind of soil, provided it be not water-logged. It is difficult to say when they have the more beautiful aspect—when they are draped in yellow catkins in January and February, interspersed with their crimson sea-anemone-like female flowers; or in summer, when the pale-green clusters of fruit are seen nestling amongst their luxuriant foliage. Between these two seasons the borders on each side of the path may be a mass of spring flowers.

First, as to the method of planting. The actual planting in the soil is a simple matter, and should be done as soon as possible after the leaves have fallen. The soil should be made firm about the roots; and either when planted, or in the spring following, a mulch of long manure should be applied, to keep the surface-soil moist, and to encourage root-formation. The length of the walk must, of course, depend upon the space at disposal; but as regards width, there are two ways of planting. The more general way, especially

where the width of ground to be devoted to it is a consideration, is to plant the trees as a single row on each side of the path, the rows having a space of about 12 feet between them, and the trees being 10 feet apart in the rows. Thus, if the path is wide enough for two people to walk abreast, say 4 feet, there will be 4 feet of border on each side of the path for spring flowers, which do none the worse for partial shade, though of course there will be no foliage above while the earlier ones are in bloom. Ten feet between adjacent trees will seem a good deal when planting the young trees, but it is not at all too much when the soil is good. The trees in nut-walks are generally planted too closely together, which means that they have to be cut a great deal to keep the walk an open thoroughfare, and to prevent the sides of the walk becoming a dense thicket. The result of so much cutting is diminished fruitfulness, and does not add to the beauty of the walk. Everyone knows that when nutting in the fields, it is the tall, free-growing stubs that produce the nuts, and not the regularly-clipped hedges.

The other and better way of planting a nut-walk, and one which only increases the width of space to be devoted to it by about 3 yards, is to plant a double row of trees on each side of the path, the outer rows 4 feet behind the inner rows, the trees in this case being 12 to 14 feet apart instead of 10 feet. The two rows should be so planted that the trees in the back row come between the trees in the inner row. Thus—



The recesses thus formed are very picturesque sites for groups of spring flowers, many of which revel in the company of nut-stubs, notably Primroses and Daffodils; Hellebores also do well, as they need shade in the summer-time. All the above distances are based on the assumption that the soil is good; if it is very poor, about one-fifth may be taken off all round.

The bearing of the trees may be increased a great deal by judicious pruning. When buying trees, it is best to choose those which have a clean stem—that is, a stem free from any tendency to send up a tangle of growth from the base. A walk of trees of the latter sort may be more picturesque and sylvan than a row of clean stems 6 inches or a foot above the ground, but the latter bear better. It is for the planter to decide whether he will give beauty or profit the chief consideration. All suckers from the ground should be removed as they appear, unless required to make new trees. All worn-out or useless wood should be cut out; and wherever the wood is crowded it should be thinned, so as to let in light and air to every part of the tree. It may look thin at first, but when the leaves get out it will be thick enough. Nuts bear principally on the twiggy lateral growth, and this should be left as far as possible. When any shoots or branches appear to be growing very vigorously in the summer-time, they should be cut back whilst growing, which will result in a number of lateral twigs, which should not be cut out unless too thick, as it is these branchlets which will bear the best fruit another year. The general pruning is best done in the early spring—say, at the end of March or the beginning of April. Nuts are almost entirely wind-fertilised, and that is why such an enormous quantity of pollen is produced on the long catkins to fertilise the brilliant little female pistils, as it is

a million to one a given grain of pollen will not be blown by the wind on to one of the pistils. Hence, if the pruning is done in the autumn or winter, there will be so many fewer catkins, with the probable result that fewer of the female flowers will be fertilised; by pruning when this process is over, there is, of course, no such danger.

Allusion was made above to propagation by suckers, but the better way is by means of layers, as it is almost impossible to get rid of basal-shoots if the trees are raised from suckers. In the layering method the shoots are pegged into the soil 2 or 3 inches deep, the under side of the shoots being notched where they are pegged. Two-year-old shoots treated in this manner will be well-rooted trees in twelve months from the time of layering. The base-buds of the layers should be removed if clean stems are wanted.

The term nuts has been used to include both Cobnuts and Filberts, the difference between them being that the latter are quite covered by the husk, whilst the former are exposed. It adds to the interest of the nut-walk if they are planted together, or in sections, with a few Purple Filberts amongst them. This Purple Filbert has the foliage, husks, and even the nuts, a dull red colour, and they show up very well, especially in the spring and early summer. The best sorts of Cobnuts are the Great Cob and the Merveille de Bolwyler; while the best sorts of Filberts are Lambert's Filbert, the Frizzled Filbert, and Webb's Exhibition Cob-Filberts. These combine flavour, size, and productiveness.

When the trees grow up, they can either be allowed to meet overhead, or cut so that the trees form a sort of upright wall on each side of the walk. In the former case there is less fruit facing the walk, as the arching-branches shut off so much sun and air; while, for the same reason, there is not so wide a range of spring flowers to select from for planting along the walk. *Alger Pelts.*

THE RAISING OF ORCHIDS FROM SEED.

WHY is it that, while some comparatively inexperienced amateurs are successful in raising Orchids from seeds, many experienced cultivators of Orchids fail completely. I know of several owners of important collections who have given vent to their disappointment in this direction, and I am constrained to assume that the cause of failure is to be found in some small detail. I pen this brief note on the subject in the hope that others may give various important details connected with this interesting branch of gardening.

To begin at the beginning. The operation of fertilising an Orchid flower is almost as simple as that resorted to in the case of any other flower, and anyone can easily ascertain the position of all the parts by dissecting a few flowers, and especially by cutting them in half longitudinally, i.e., from the tip of the column to the ovary or flower-stem.

Orchids which are very dissimilar in their characteristics may be cross-fertilised, in some cases good seeds being obtained; but in a much larger proportion the development of the seed-capsule is the only result, the seeds being imperfect, and incapable of germinating. This power of obtaining capsules of full size, and yet containing good seeds of no vegetative power, is the chief trouble of the hybridist, as it compels him to sow large quantities of seed. Nevertheless, these generally unproductive capsules must be looked after, for often there are a few good seeds among a great deal of chaff, and often he is rewarded for his care and attention by an unexpectedly good hybrid.

While the capsules are forming, it is best to hang up the bearing plants, and as soon as the ripening capsules show signs of splitting, remove them, and place each in a separate pan, the label bearing the record being put with each. As soon as ripe, it is best to sow the seeds forthwith, no matter what the season is, for the seeds are very delicate, that

* *Passiflora europhylla* (Masters, sp. n.), § *Decaloba*.—Glabrescens, foliis late oblongis subtus purpurascens, basi rotundatis, 3-nerviis, glandulis magnis orbicularibus instructis, apice truncato-bilobis, lobis triangularibus divergentibus lobulo centrali parvo; stipulis setaceis deciduis; petiolis $2\frac{1}{2}$ cent. et ultra; pedunculis petiolis parum brevioribus; floribus diametro 4 cent. floris tubo pateriformi, sepalis lineariblongis obtusis; petalis parum brevioribus albidis; corona florali e filis pluribus petalis aequilongis constante; corona media inflexa membranacea plicatim lobata, lobis obtusis puberulis; corona infra medianam brevi annulari carnosa; gynophoro purpureo; ovario ovoidico latecente glabro longitudinaliter costato. Ex Guiana Britannica misit cl. Im Thurn; A. cl. Sander, culti.

there is more risk in keeping them than in taking the chances of their not germinating for a long time. It is generally admitted that the seeds stand the best chance of germinating if they are sown on the surface of the compost in which the plant which bore the seed is growing, or on one of a similar character. Before sowing, the materials should be thoroughly moistened by being immersed in rain-water, and afterwards hung up to drain away superfluous moisture, and the seeds sown on the moist surface. The basket or pot should then be hung up to the rafters in a moist temperate house, and on every occasion when the plant is given water afterwards it should be done by immersing it in a tub or tank only deep enough to

and most of the latter assert that for general purposes they constitute the chief elements of success, although in different establishments different devices—generally very simple ones—for forming surfaces on which to sow the seeds may be found. In some places cross-sections of hardwood sticks, cut about an inch thick, and placed in moisture-holding pans so that the seeds may be sown on the rough surface, which is kept constantly moist from below, are used. In other gardens pieces of tree-fern stems in pans of water are tried, and so on with other moisture-holding material. There is yet another material which, by the light of recent scientific theories, might give good results, and that is the lumps of roots knotted around the peaty

bloom opened its first flower on the 13th inst. *Byblis gigantea* is a remarkable plant, resembling in general appearance *Drosophyllum lusitanicum* more than any other plant belonging to the order; but the glandular catching structures are not tentacles—they are unicellular hairs, and thus differ from the true tentacles of other *Droseraceae*. They show no movements. Almost sessile digestive glands occur in numbers along the whole leaf. The leaves vary in length, some are 6, others 9 or more inches long; they are terete, and end in a small knob. From this point, formation of a new tissue seems to take place; while elongation goes on throughout about half the length of the leaf. The solitary flower is rather more than an inch in diameter when expanded, and is borne on a peduncle about half the length of the leaves, which also has sticky, catching hairs; the calyx also is covered with these. The flower is very unlike that in most other plants of this order in the colour of the petals, which are dark purple. The edges of the petals are cut in a fringe. The flower opens and closes daily for several days in succession. The plant will be a decided acquisition to those who cultivate the members of the order *Droseraceae*. In cultivation it seems to be a comparatively free-grower. Here it is grown in a light sandy peat, and given a good supply of water—indeed, it is never allowed to become dry. It requires a sunny position, and an intermediate temperature.

The only other species of this genus, *B. linifolia*, is a native of N. Australia and Queensland, and appears to be a much smaller plant in all its parts, rarely growing more than 6 inches in height; and it has peduncles longer than the leaves, and smaller flowers. The photograph (fig. 109), by F. C. Crawford, portrays well the habit of the plant, and manner of flowering. *R. L. Harrow*, Royal Botanic Garden, Edinburgh.



FIG. 109.—BYBLIS GIGANTEA, FLOWERS PURPLE: EDINBURGH BOTANIC GARDEN.

THE ROSARY.

PLANTING SEASON, AND WHAT TO PLANT.

So much is being written upon the culture of the Rose, that it is difficult to break up new ground, and the authorised publications of the National Rose Society give such minute and carefully-considered directions with regard to planting that no Rose-grower, or prospective Rose-grower, need be without the fullest information on the subject; but the question, what we are to plant, is ever new. There are Roses, for instance, on which our affections have been fixed for many a year, and which served us very well in their time, but which we now feel must give place to others of the same character, but better in every way. We can remember the time, for instance, when Jules Margottin, John Hopper, and Comtesse Cecile Chabillant were to be seen in most winning stands, but now are only considered as garden Roses. But here let me say, before answering the question, what shall I plant? that another should be asked and answered, viz., what do you want your Roses for? Are you ambitious to become an exhibitor, or do you want to grow the Rose simply for its beauty and fragrance? If the former you must remember that you stand a much better chance in competing for prizes if you restrict yourself as to the number of varieties grown, and have a goodly number of each sort. One of the most common questions put to a Rose-grower is, "How many kinds do you grow?" The questioner believing that the position of the Rose-grower depends on the number of the sorts, but this is quite a mistake; if you have only two or three plants of a sort, it is probable that on the day of exhibition you would not find a bloom sufficiently good for cutting. If you had twenty plants your chances would be proportionately increased, and so one's advice to beginners is, mark out for yourself two dozen of the best varieties, and get ten or a dozen of each of them. It is very different when you are not an exhibitor. There are so many charms of different

wet the materials to two-thirds of its depth, otherwise the seeds will be floated off and lost, and seeing that the materials never become quite dry, these are very important points.

The germinating seeds are seen as minute spherical green bodies, and as soon as any of them get large enough to lift, they should be pricked off round the edges of previously prepared small Orchid-pans, and again suspended near to the roof. At a later period they should be potted singly, and in due time such as survive will become flowering plants.

As it is not possible to suspend a large number of small seedlings, it is a good plan to raise a small light woodwork staging near the glass on which to place the little plants, as so situated the effect is the same as if they were hanging up.

The methods indicated above are generally carried out more or less by all successful Orchid hybridists,

vegetable deposit in which the Orchids grow in their native habitats, and which the Orchid importer will say is unfortunately too easily procurable among the quantities of Cattleyas and other Orchids which come to hand in bad condition, or dead. Among all the points contributing to failure, I think that applying water overhead is the most dangerous, and attention to dipping instead might save the situation with some of the unsuccessful. *Hybridist.*

BYBLIS GIGANTEA.

In the *Gardeners' Chronicle* of December 2, 1899, p. 409, we noted the raising of this interesting insectivorous plant from seed received from W. Australia. The seedlings have since made considerable progress in growth, and the first to

kinds about the Rose, you like to have them more under your eye, and you care little whether they are up to exhibition form or not; and I think this latter is a more pleasurable way of growing the Rose. It is, however, quite true that many of our best exhibition varieties are also the best for the ornamentation of the garden; but, on the other hand, there are some which are most highly prized by the exhibitor, but which are not suitable for the general cultivator because of their delicacy of constitution—and so most visitors to a show, in looking over a winning stand of flowers, will probably fix his or her attention upon a variety of whose constitution and habit of growth they know nothing. In drawing attention, then, to some Roses for planting during the present season, I shall enumerate those of more recent origin than the old favourite varieties we have had so long with us. Those who simply look at Rose-cultivation from an exhibitor's point of view, cannot do better than consult the carefully-drawn up table by Mr. Edward Mawley, which appeared in the *Journal of Horticulture* last week. It is remarkable how many of the newer Roses have taken up a high position, and this is as it should be; for if a new Rose is not superior to those we already have, it occupies a false position. But we must notice with regard to these newer Roses, the great lack of high colour. Pink of one shade or another, cream, and white, we have in abundance, but nothing so far as I know of which has high colour like Charles Lefebvre, Prince Camille de Rohan, Reynolds Hole, and Horace Vernet. Raisers of new Roses would do well to devote their attention to this matter, and I hear that one well known raiser has some promising seedlings of this kind.

Marquise Litta.—This Rose, raised by Pernet Ducher, and sent out in 1893, has acquired a high position among Rose-growers; it is a fine H. T., of brilliant carmine-red, and has several times gained the medal for "the best H. T. in the show"; it is vigorous in growth, and may safely be added to the most limited collection.

Helen Keller (A. Dickson & Sons).—One of the beautiful pink Roses raised at Newtownards. The colour is bright cerise, and it is a very distinct flower.

Bessie Brown (A. Dickson & Sons).—One of our best white hybrid Teas, of good form and substance, not absolutely pure white, but with a touch of cream in it, it may well take the place of some of our white Teas upon which we used to rely, being of vigorous habit, and likely to be useful as an exhibition variety.

Tom Wood (A. Dickson & Sons).—A deep red Rose; valuable as a garden Rose, as it blooms freely in the autumn.

Countess of Caledon (A. Dickson & Sons).—A prominent Rose which has not as yet been sufficiently seen for Rose-growers to determine its true position. In colour it is a rich carmine, the bloom large and very sweet, and the form perfect.

Ards Rover (A. Dickson & Sons).—This is a valuable climbing variety, of a very distinct, bright crimson colour, shaded with maroon. The flowers are bright, growth vigorous, and foliage good.

Dawn (Paul & Son).—A garden Rose of a new character; a cross between Caroline Testout and a Bourbon; and the flowers, rosy-pink flushed with silvery-rose, are produced in large clusters. When shown at the Drill Hall last summer it was much admired, and will doubtless be found in most Rose-gardens when better known.

Psyche (Paul & Son).—This is a Rambler Rose, partaking much of the Crimson Rambler, both in its rampant growths and profusion of bloom. The flowers are produced in large bunches like Crimson Rambler, but they are of better shape, of a pleasing shade of white suffused with salmon and pink, with a yellow base to the petals.

Rev. Alan Cheales (Paul & Son) cannot be described as an exhibition Rose, but from its large size and peculiar colouring acceptable as a garden Rose. Very free and perpetual, and blooming well in the autumn.

Madame Cadena Ramey (Pernet Ducher).—A Hybrid Tea sent out in 1897, and which has at once taken up a good position. The flowers are large, full, and of a perfect form, rosy flesh-coloured shaded with yellow, and sometimes edged with rosy-carmine, and thus very attractive.

Rosslyn (Alex. Dickson & Sons).—This Rose is a perfectly distinct and good Rose—a sport from Suzanne-Marie Rodocanachi, which it resembles very much in every respect except colour, which is a delicate rosy-flesh.

Aurora (Wm. Paul & Son).—Colour rosy-salmon, with large, full imbricated flowers.

Bladud (Cooling & Sons).—A beautiful light-coloured Rose, silvery white, with centre pale blush pink—a very good autumnal bloomer.

Waltham Standard (William Paul & Son).—A brilliant carmine Rose, shaded with scarlet, with a tinge of violet; vigorous in habit.

Jubilee.—A transatlantic Rose, said to be an improvement on Prince Camille de Rohan, and to be more vigorous than this variety. Should it maintain this character, it will doubtless be an acquisition.

Mrs. Frank Cant (F. Cant & Co.).—A pale pink Rose, shaded with silvery-white, will be found a good variety for exhibition purposes.

R. B. Cater (Cooling & Sons).—A beautifully-shaded, bright carmine; flower of large size, bold and massive, with a high centre, and stout petals. Likely to be a good, lasting Rose.

Royal Scarlet (Paul & Son).—A single Rose fully justifying its name; probably the most truly scarlet-coloured variety we have. Very vigorous, and admirably suited for bedding; and as it is an H. P.; it is also an autumn bloomer.

Ulster (A. Dickson & Sons).—Probably the best Rose yet sent out by this firm, both in foliage and flower very distinct; the blossoms are very large and beautifully formed, with high-pointed centres; colour bright salmon, and particularly fragrant.

There have been other Roses exhibited, but I think those enumerated will prove to be the best in their respective classes. I have said nothing about Teas, as I have already given my opinion about them. *Wild Rose*.

NURSERY NOTES.

ROBT. P. KER AND SONS, LIVERPOOL.

THE Aigburth Nurseries at Grassendale, near Liverpool, have long been famous for the magnificent Codiaums (Crotons) cultivated there, and it was with unusual pleasure we embraced an opportunity that presented itself at the close of the past summer to see such a glorious display of these plants as is constantly maintained in the glass-houses. We were not disappointed in respect to the Codiaums, but there were also many other plants to be seen under cultivation, and none but was in excellent condition. Messrs. Ker have a seedsmen's and florists' business in Bassett Street, Liverpool, and we were fortunate in having for our guide from this place to the Aigburth Nurseries, and to the Botanic Gardens, the genial head of the business, Mr. Ker, senior. We entrained at the City station of the Cheshire Lines Railway, and were very soon at a little station known as Cressington, from which place the Nurseries are but little removed. They are scarcely seen before they impress the visitor with a sense of neatness that will remain with him the whole time he is there, for seldom indeed are seen such cleanliness and absolute order in commercial establishments as Mr. Ker maintains in his. Even at the expense of being considered old-fashioned by some folk, Mr. Ker believes, and always carries out the policy of the old proverb, that anything that is worth doing at all is worth doing well, and he has refrained from increasing his business responsibilities and his nursery grounds beyond a point at which they can be kept in perfect condition. The general excellence of the nursery stock

is also due to another fact: that no attempt is made to grow all species of plants whether they will succeed in the district or not, for beyond the three specialties to which we shall briefly refer, the other plants, and especially those which are cultivated out-of-doors, have been specially selected because they will give the best results in the neighbourhood.

At the entrance to the nurseries there is an office on the right-hand side, and a flower-garden on the left, the paths leading from thence over the whole ground leaving nothing to be desired in the matter of convenience.

THE GLASS-HOUSES.

There is a fine dome-roofed central structure, with six houses radiating from it at equal distances. These constitute the main feature of the glass-houses; but there are many other houses that are unconnected with each other, and are used for particular purposes. The central house already mentioned is full of fine healthy Palms, that, owing to the height and shape of the glass roof, are able to grow to a considerable size, there being plenty of headroom. In the other six houses we noticed excellent batches of Aralias, including *A. leptophylla*, *Eulalias*, Ferns (which entirely filled one house), *Pandanus Veitchii*, the new *Ficus repens variegata*, *Echmeas*, *Cordylines*, and general ornamental stove plants. There were also two plants of *Coccoloba pubescens*, a stove evergreen tree, belonging to the order *Polygonaceæ*; it has white flowers, but is seldom cultivated outside botanic gardens. There is another and newer Palm-house, about 120 feet by 30 feet, full of beautiful specimens of all sizes.

We next inspected a house containing Roses in pots, many of which were budded last spring, and others were growing on their own roots. A fine stock of the variety *Crimson Rambler* was included, and in addition to the climbing varieties there were numerous dwarf plants, also in pots.

Turning our attention to the Codiaums, we were delighted with the display. They are grown in light span-roofed houses with glass roof and sides, so that sunlight can reach the plants from above, and through the sides of the house as low as the staging. During June, July, and August, we believe a little shading by roller blinds is used on the sunny side, but it is moderate, and only employed in excessively hot weather. In bright weather the plants are syringed once each day, but this is a practice that should not be followed in localities where the water obtainable contains a large quantity of lime, or the brightly coloured leaves of the Codiaums, unless they be very frequently sponged, will be always covered with a dirty white coating that quite destroys their beauty. Messrs. Ker make a specialty of Codiaums, and consequently many of the plants cultivated at Aigburth are sold through trade firms in London and elsewhere, as well as to private gardens. Yet one seldom sees such perfect specimens in gardens or at exhibitions as we saw at Aigburth, for Codiaums soon deteriorate in unsuitable conditions. There are single-stemmed plants with and without branches, 2, 3, 4, and 5 feet high, with perfectly-developed leaves, not one of which has been lost, and each of them coloured to the highest degree of which the variety is capable, showing exactly the peculiar colour characteristics of each, and by thus accentuating their differences, rendering them almost as distinct from each other to the visitor as they are to such specialists as Messrs. Ker. From such a wealth of varieties we took the names of the following because they seemed to compel us to do so, although many of them are well known: *C. Aigburth Gem*, one of the appendiculata section, has graceful leaves, in which the colours red, yellow, and green, are beautifully blended; *C. Aigburthensis* is one of the best of the angustifolius class, the narrow leaves being golden colour and green; *C. Golden Ring*, which was also distributed by Messrs. Ker, is a charming variety, and no less remarkable for high colour

than for the peculiar ring-like contortions of the leaves; *C. Hawkeri* makes an excellent pyramid, and its leaves are bright golden-yellow and green; *C. Reidi*, with moderately broad leaves, in which the veins are, crimson colour, bordered yellow; *C. Warreni*, with long, narrow, much-twisted leaves of deep green, coloured with yellow and crimson; *C. musaicus*, with bright red stems, and leaves of moderate width, with blendings of green, yellow, and brilliant crimson colours; *C. Prince of Wales*, with long, pendulous, twisted foliage, of rich gold colour, in such splendid condition that we find twelve crosses against its name in our notebook; *C. Princess of Wales*, less satisfactory than the Prince, because it "colours" so much that the absence of chlorophyll in the leaves causes the plant to be exceedingly difficult to keep in good condition, though Messrs. Ker

Hippeastrums are never shaded, even when the sun is hottest. "The leaves may be a little shorter in consequence, but it does not matter, nor does a little burning." All the plants looked well, including last year's seedlings. Messrs. Ker were sufficiently enterprising to take some of their *Hippeastrums* to the St. Petersburg exhibition, and they were awarded two gold medals.

Cyclamens are cultivated here in extremely large numbers for the production of seeds and plants for sale. We saw house after house which was filled with young seedling plants, growing very satisfactorily. The strain is a capital one, and produces very large flowers.

In other houses we noticed *Anthuriums*, additional *Palms*, *Caladiums*, *Begonias*, including that most popular variety *B. Gloire de Lorraine*; *Carnations*, *Gloxinias*, *Ericas*, *Azaleas*, &c.

present effect of which is very gratifying; but we must draw our remarks upon this well-kept nursery to a close with an expression of appreciation of Mr. Ker's extreme courtesy and kindly welcome.

HERBACEOUS PLANTS AT KEW.

For a considerable part of the year the herbaceous borders at the sides of the T-range constitute one of the most attractive features of the garden. The borders are very wide, so that ample space is afforded to the plants, and comparatively little tying-up or staking is required, as the plants grow naturally. At the back are the taller *Michaelmas Daisies*, *Sunflowers*, *Rudbeckias*, *Silphiums*, and the like (fig. 110). In the middle are such plants as *Chrysanthemum serotinum*, and many of the early *Chrysanthemums*; *Rudbeckia speciosa*, *Aster*



FIG. 110.—HERBACEOUS BORDER AT KEW.

manage it well; *C. Challenger*, with long, pendent leaves, exceedingly graceful; *C. Thompsoni*, with large golden-yellow coloured leaves, having narrow green margins; *C. Delightful*, with leaves of moderate width, green and gold colour; *C. Newmanni*, the highest coloured of all *Codiaeums*, vermilion-crimson and copper-green; *C. Van Hoostersii*, *Flamingo*, and *Nestor*, all of which are indescribably handsome, as seen at Aigburth. Mr. Ker confirmed our idea that the narrow-leaved type is the more popular, and said that in order to get good plants of this, or any section, it is imperative to obtain first-class cuttings.

Hippeastrums are another specialty of Messrs. Ker, who have taken much trouble for many years in improving their strain by selection and cross-breeding. A fine collection of these plants in flower are shown almost every year at one of the Royal Horticultural Society's meetings in London, and we have had occasion frequently to remark favourably upon them. At the time of our visit to Aigburth, however, the plants were not blooming; they were plunged in their pots in beds, in span-roofed houses. Mr. Ker told us that these

THE STOCK OUT-OF-DOORS.

We have already described the nature of the plants growing in the out-door department as being particularly suitable for the Midland climate, and it should be remembered that in the neighbourhood of Liverpool the high winds experienced are so excessive, they have to be considered by all cultivators. Amongst the trees and shrubs were excellent specimens of tree-*Ivies* and *Hollies*. Of the latter, *Hodgin's* variety, and the old *Silver*, and most others do well in the district, but there are several varieties that have proved too tender. Of *Rhododendrons*, the hardiest are kept in considerable quantity, and certain varieties, as *Cynthia* crimson, *Brayanum*, &c., &c., succeed capitally, but there are many sorts with the finest flowers that have proved too tender for the climate in Lancashire. *Acer Negundo variegatum* is strongly recommended planters near to Liverpool; *Skimmia japonica* also; and of decorative trees for street planting in Liverpool, Mr. Ker knows the best perfectly. There is a long, broad path in the grounds with rare shrubs on either side, edged with young *Retinosporas* and golden Box, the

acris, *A. diffusus*, *A. cordifolius*, and in front many plants of dwarfer habit, grouped in triangles between the taller plants. Some of these plants are very elegant, even when destitute of flowers, as *Cosmos bipinnata*.

MARKET GARDENING.

SELECTING AND PLANTING FRUIT-TREES.

THE planter being now busily engaged, a brief note on selecting and planting will not be amiss. The first step to be taken is to make a list of the trees and bushes wanted, choosing only sterling good bearing varieties of strong growth, which find favour with growers and consumers alike. Lose no time in obtaining them from the nurseryman, say in numbers of half-a-dozen of each variety. If trees are planted in rows 16 feet apart in both directions, 170 will be required per acre. The following lists of select varieties of Apples, Cherries, Pears, and Plums, will be found to include the pick of modern varieties.

Dessert Apples.—Mr. Gladstone, Beauty of Bath, Irish Peach, Lady Sudeley, Devonshire Quarrenden, Worcester Pearmain, Red Astrachan, King of Pippins, Cox's Orange Pippin, Fearn's Pippin, Claygate Pearmain, and Baumann's Red Winter Reinette.

Culinary Apples.—White Transparent, Keswick Codlin, Duchess of Oldenburg, Lord Grosvenor, Lord Suffield, Potts' Seedling, Ecklinville Seedling, Stirling Castle, Emperor Alexander, Frogmore Prolific, Peasgood's Nonsuch, New Hawthornden, Warner's King, Lord Derby, Bismarck, Northern Greening, Lane's Prince Albert, and Bramley's Seedling.

Cherries.—Early Rivers, Black Heart, Frogmore Bigarreau, May Duke, Bigarreau Kentish, Black Eagle, Bigarreau Napoleon, and Morello.

Dessert Pears.—Souvenir du Congrès (on wilding stock), Beurré d'Amanlis, Williams' Bon Chrétien, Louise Bonne of Jersey, Durondeau, Marie Louise, Marie Louise d'Uccle, Pitmaston Duchess, Beurré Diel, Doyenné du Comice, Josephine de Malines, Le Lectier.

Plums.—Rivers' Early Prolific, Orleans, The Czar, Belgian Purple, Monarch, Pond's Seedling, Victoria; the "Old" Green Gage is the best for dessert, and the Farleigh Prolific Damson is the best for preserving.

Currants.—Baldwin's or Carter's Champion is the best black Currant to grow, being a profuse bearer of long clusters, consisting of large berries; Knight's Early (Red Scotch) and Ruby Castle are the best red varieties; and White Dutch is the best all-round white.

Gooseberries.—Whinham's Industry, Lancashire Lad, Crown Bob, Rifleman (reds); Whitesmith, Yellow Rough, Golden Drop, and Keepsake (green) are the best to grow.

Raspberries.—Superlative, Norwich Wonder, and Carter's Prolific are excellent in every respect.

Strawberries.—Laxton's Noble, Royal Sovereign, and Sir Joseph Paxton are reliable varieties for marketing, the fruits being early, fine in size, quality, shape, colour, and the plants are prodigious croppers when generously treated.

Trees of pyramidal form are the best, space being thus economised and labour saved in pruning the trees and gathering the fruit therefrom. Should the land intended to be planted with fruit-trees be exposed on the north and east sides, it would be advisable to plant one or two rows of Damsons as wind-screens. If the land has been under farm crops, three rows of Gooseberries and Currants may be planted between the rows of Apples, Pears, Plums, and Cherries; also three plants or bushes may be planted between the trees in the rows, allowing 4 feet between the trees and bushes, and the same distance between the latter in the rows.

A few years hence, when the trees and bushes have extended their dimensions, the Currants and Gooseberries can be thinned out, and transplanted elsewhere. On the other hand, should the ground have been in grass for several years, it should be ploughed. Then mark the position of the rows, and the position of each tree; excavate the holes as described below, planting the trees this month, and in December if the weather still keeps open. The land between the trees should not be harrowed before March next, but left just as it was turned up by the plough. In March it should be well harrowed, manured, ploughed, and harrowed again, and rolled, if that be necessary; following these operations by planting it with Potatoes. Gooseberries and Currants may be planted in the manner indicated above in November following. Probably the crop of Potatoes would cover the cost incurred in the purchase and planting of trees, and preparing the ground for, and planting it with Potatoes.

PREPARING THE HOLES AND PLANTING THE TREES.

The method of preparing the Holes, &c.—This kind of work should be carried out thoroughly, the success or otherwise of the venture depending in a great mea-

sure upon the way in which this work is performed. For trees obtained from a nursery, the holes should be made 2 feet in depth and diameter, the top spit being put on one side, and the bottom spit and crumbs apart by themselves, then let the bottom of the hole be broken up with a digging-fork. Having done this, place the top spit in the bottom of the hole, and mix a small quantity of decayed manure with the excavated soil if it be lacking in fertility before returning it to the hole. A hole should be filled to within 6 or 9 inches of the top; the soil being higher in the middle than at the sides, in readiness for planting the tree thereon. In planting, shorten back straggling and damaged roots, and spread the whole of the roots out all-round over the soil. Cover them with fine soil to the depth of 6 inches, then shake each tree in an upward direction to allow of the soil getting settled among the roots before making it moderately firm with the feet. Should the land slope in any direction, a slight depression should be made around each tree, so that rain and snow-water may be retained. On the other hand, should the ground be ever likely to be flooded, a layer of brickbats, clinkers, a few inches in depth, should be placed in the holes before any soil is placed in them. All trees should be mulched when planted, with manure laid on 3 inches in thickness. Gooseberries and Currants intended to be permanent, should be planted at 5 or 6 feet apart, two rows of Strawberries, Potatoes, Cauliflowers, or Runner Beans (not to be staked), being planted in the intervening space for the first three years.

Raspberries delight in a deep soil which has been well manured. Planting them in rows 3½ to 4 feet asunder, and pretty close together in the rows, in order to secure heavier crops of fruit the first year or two than would otherwise be obtained. Two feet every way will be ample for Strawberries. *H. W. Ward.*

FOREIGN CORRESPONDENCE.

THE DAHLIA IN AMERICA.

THE Dahlia continues to grow in favour here, and a higher standard of excellence is attained in each successive year. The flower claims a few real enthusiasts, who are doing good work in propaganda. But when all is said and done, it must be confessed that we are a long, long way behind the English fanciers. This is largely due to the climatic conditions, and I much doubt whether America will ever be able to grow such "elegant" blooms as the highest fancy demands. This year the blooms are deficient in size, and there appears to be always a want of depth in the flowers here. The show and fancy types are not able to develop their centres before the outer rays are far gone; thus, on the exhibition-table, flowers more or less immature are the rule; but such as we can get we all love—and if we do our best what more can be expected?

The Dahlia show of New York is held under the direction of the American Institute, and is largely supported by growers from New England. Mr. Burt, Messrs. Lothrop & Higgins, both in Massachusetts; and Rowell & Granz, New York; Messrs. W. A. Burpee & Co., Philadelphia, Pa., have this year entered the ranks, and we may expect some important influences from that move. The show took place September 25–27.

It will be interesting to the English reader to learn that, with remarkable uniformity, reliance is placed on imported varieties. Our own raised flowers are mostly of the decorative type, and they find the greatest favour. Fully one-half of the display was Cactus, or decorative, and the future of the flower rests very largely on the improvement of those sections. Colonel Wilson, an English variety just newly imported, attracted much favourable comment. Here we have the type that just suits the American taste—a large, loose flower, and a pure self-colour. Such varieties as Perle de la

Tête d'Or, Matchless, Standard-bearer, and Strohelein Krone [= The Crown (Strohlein)], Arachne (although not a pure colour), the native-raised Clifford W. Bruton, and W. Agnew, two of the very finest decoratives, are the leading favourites. Messrs. Burpee showed an orange-salmon decorative of large petal and good substance, which I fancy will take rank as a standard sort. We have nothing quite like it; and, moreover, it lights up well at night. The firm also had a yellow show of fair form and size, shown as Magnificent; it was recommended by the exhibitor as a bedding variety. The plant is very dwarf, and flowers freely, but the Dahlia experts present reserved judgment till another year. Harlequin (a fancy), crimson and white, was thought very good, and this with the Salmon Queen were Certificated by the Dahlia Society. A buff fancy, having irregular crimson flakes, also was thus recognised. ROWELL & GRANZ, Hicksville, L.I., N.Y., were the exhibitors.

Perhaps it will be of some use to traders who are serving the American market to have a few more names of the most highly-esteemed blooms. John Bennet, Blanche Keith, Miss Webster, Norma, White Swan, Queen of the Belgians, Marchioness of Bute, Adventure, Black Chorister—all of them are in high favour.

The history of Dahlia-growing has little of interest of late. Thanks to one or two men, such as Burt of Taunton, Mass.; and Lothrop & Higgins of East Bridgewater, Mass., there have been a few collections maintained. These men among trade growers, and Rev. C. W. Bolton, an aged English divine, Rector of Pelham Manor, N.Y., have never failed in their devotion to the flower through all the recent years of dulness.

The Dahlia Society, which was established two or three years ago, had fallen into a comatose condition, but a sturdy effort is being made to restore it to life. It will live of course, and may do good work. A half dozen or so re-constituted themselves as the Society, and awarded the Certificates already named. Mr. Samuel Henshaw, of the New York Botanical Garden, was elected President. His name will be recalled by older growers as connected with two old-time Dablias named after his father and grandfather, who lived near Manchester, England. Mr. Henshaw will also be personally known to some of your readers, as he has only just returned from a trip across the water. J. W. Withers, of *American Gardening*, New York, is the Secretary-Treasurer.

A NEW GLADIOLUS—G. × PRINCEPS.

I have before me now a remarkable hybrid Gladiolus raised by Dr. Van Fleet, Little Silver, N.J., by crossing the Childsii race with the old species, *G. cruentus*. Childsii is the American name for Max Leichtlin's cross of Gandavensis and Saundersii. The flower is rich bright scarlet, 5½ inches across, well expanded; the lower segments have an area of white in the centre, and the basal half is white, mottled by scarlet. The flower-segments are 1½ by 3 inches, and altogether a most striking flower is the result. It is a great improvement over the Childsii group, in having a larger flower well carried on a stalk 3 to 4 feet long, and the colour is brilliant beyond description. It has been named *G. princeps*.

Dr. Van Fleet is an experimentalist of some note, and occupies himself largely with hybridising. His work on Roses promises to develop some fine things for the climate; and already his influence has been seen in some of our garden vegetables. *Leonard Barron.*

SANTA BARBARA, CAL., U.S.A.

I send you a list of the Palms grown here in the open air, planted out. On October 10 we opened a Chrysanthemum and plant show, and we conceived the idea of decorating the walls with Palm-leaves, and, as far as possible, exhibits were labelled correctly. The exhibit was made by J. W. Gillespie (gr., J. Compton), who received nine-tenths of all the plants through the mails, and planted the first

Palm in the ground ten years ago. The only native Palm we have is *Brahea filifera*, and a variety of it called *robusta*, and in this part of the U.S.A. no ornamental plants were grown till about 1865. If any botanist wishes, I will send upon request for identification, as far as is possible, any seeds of the Palms mentioned, or parts of the plants which are required to be identified:—

Areca Baueri, *A. lutescens*, and *A. sapida*.

Brahea calcarata, *B. robusta*, *B. filifera*.

Cocos australis and fruit, *C. Alphonsei* and fruit, *C. Blumenavia* and fruit, *C. argentea*, *C. Bonnetti* and fruit, *C. brasiliensis* and fruit, *C. campestris*, *C. humilis*, *C. sapida* and fruit, *C. flexuosa*, *C. plumosa*, *C. Romanzeffiana*, *C. schizophylla*, *C. Weddelliana*, *C. Yatay* and fruit.

Diplothemium maritimum and fruit.

SISAL HEMP: OBTAINED FROM TYPICAL AGAVE RIGIDA OR *A. RIGIDA* VAR. *SISALANA*?

The characteristic of *Agave rigida*, Mill., var. *sisalana*, Engelm., is, as every lover of succulents knows, the absolute spinelessness of the leaf-edges, whilst the type *A. rigida* has, besides the long, strong thorn at the end, extremely spiny leaf-edges. However, it seems to me that the Sisal-hemp exported from Yucatan and other countries is not obtained from the spineless var. *sisalana*, but (perhaps exclusively) from the spiny type. One is forced to this conclusion because Ferd. v. Müller, in his *Select Plants for Industrial Culture*, &c., speaks only of *Agave rigida*, Mill., furnishing the Sisal-hemp, but does not mention the spineless variety, *sisalana*. Semler, in his *Tropische Agri-cultur*, vol. iii., an excellent work, does not mention

Chronicle the question—Whether they cultivate upon their respective plantations the spiny or the spineless form, the true *A. rigida sisalana*; and if they cultivate the spiny type, why do they not try the evidently better spineless form?

There is no doubt the north of this colony affords to the greatest extent the necessary conditions for Sisal-growing; but there grows in the Waterberg district such an enormous quantity of Bowstring plant (*Sansevieria cylindrica*), that needs only to be harvested, that it is doubtful whether Sisal or Bowstring industry is to be given the preference. *K. Dinter, Windhoek, German S.-W. Africa.*

CORYANTHES MACRANTHA.

The photograph (fig. 111) is of a bloom produced this season in the Orchid collection of Mr. J. G. Gibson, of Lesbury House, Northumberland. The collection as a whole, and the successful flowering of a difficult subject as this *Coryanthes* in particular, do very great credit to the head gardener, Mr. James Riddell, with whom the entire management rests. He has been good enough to supply the following notes as to the cultivation of *C. macrantha*, leading to such satisfactory results:—

"The plant was bought from Mr. Sander, of St. Albans, about two years ago, and was hung up close to the glass in the Dendrobium-house in a light position. It received a large quantity of water when in active growth, but when the bulb was made up it was kept on the dry side for a few weeks till growth recommenced. It was then surface-dressed and well watered till it matured the bulb that produced the flower-spike, when it was put on the stage for a short time and kept partly dry. After this rest it was hung up again, got a good watering, and in a few weeks it threw its flower-spike, which lasted only a few days in bloom."

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT SOUTHGATE HOUSE.

ORCHIDS and Chrysanthemums, both excellently well cultivated, provide the greater part of the display in the gardens of C. H. Feiling, Esq., at Southgate. Of the Orchids, here, as in other gardens, the showiest in flower are the varieties of *Cattleya labiata*, *C. aurea*, *Dendrobium Phalæ-nopsis Schroderianum*, *Lælia pumila*, and *Cypripediums* in variety, all of which plants are well represented. The centre stage in one of the greenhouses is filled with *Azaleas*, *Pelargoniums*, *Clivias*; and other plants which make a good display are *Oncidium varicosum*, *O. Forbesii*, *O. tigrinum*, *O. pulvinatum*, *Miltonia Clowesii*, and other Brazilian species from high altitudes, all of which are grown cool, and consequently make strong growth and fine flowers. Striking instances of the success of this cool treatment of the plants is specially marked in the strong specimens of *Oncidium sarcodes*, *O. Marshallianum*, and *Odontoglossum Cervantesii*, all of which rapidly decline when grown too warm. In the same house some *Lælia autumnalis atrovirens* are flowering grandly, and two or three plants of *Lælia anceps*, placed there as an experiment, are sending up flower-spikes more satisfactorily than in the warmer houses.

The *Odontoglossum*-house is filled with good plants that are making satisfactory progress, some few of them being in flower. *Epidendrum vitellinum*, *Sophranitis grandiflora*, and a few other species are also flowering.

The *Cypripedium*-house is furnished with flowers throughout, the greater part of them being borne by the now numerous forms and hybrids of *C. insignis*, *C. × nitens*, *C. × Sallieri aureum*, &c. Others in bloom were forms of *C. Charlesworthii*, *C. × Pollettianum*, *C. Volonteanum*, *C. × Pit-cherianum*, *C. × radiosum*, *C. × Maynardi*, *C. × T. W. Bond*, a number of other hybrids, and some

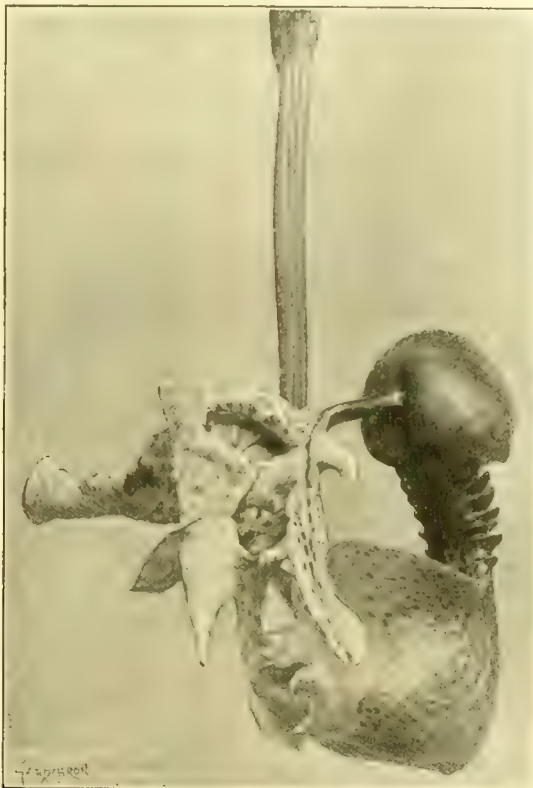


FIG. 111.—CORYANTHES MACRANTHA, IN THE COLLECTION OF J. G. GIBSON, ESQ.

Erythea edulis and fruit, *E. armata* and dead flower-spike 14 feet long, and, as far as I could see, a male spike.

Jubea spectabilis.

Livistona chinensis, *L. borbonica*.

Oreodoxa regia.

Phoenix canariensis and fruit, *P. cycadifolia*, *P. glaucescens*, *P. humilis*, *P. reclinata* and fruit (this must be a hybrid, as we have no male of *P. reclinata*), *P. rupicola*, *P. Robelini*, *P. melanocarpa*, *P. paludosa* and fruit, *P. natalensis*, *P. tenuis*, *P. zelanica*, *P. zanzibarensis*.

Rhapis flabelliformis.

Sabal havanensis, *S. longepedunculata*, *S. glaucescens*, *S. Blackburniana*.

Seafortia Cunninghami, and *S. Alexandræ*.

Trachycarpus australis, *T. conduplicatus*, *T. cochinchinensis*, *T. dealbatus*, *T. elegans*, *T. excelsus*, *T. gracilis*, *T. humilis farinosus*, *T. indicus*, *T. minor*, *T. Ne-Plus-Ultra*, *T. nepalensis*.

All the *Trachycarpus* were in fruit, and *T. nepalensis* was particularly noticeable with a bunch of fruit weighing nearly 5 lb. *W. H. Morse.*

A. sisalana (as he calls probably the type) a spineless variety. And, to confirm my opinion, that most Sisal-hemp is produced by the spiny type, I found in a manuscript by Dr. Kaerger, Mexico, entitled, "Über die Cultur der *Agave rigida* var. *sisalana*," the remark, that before introducing the leaves into the machine, the thorny edges of the leaves are to be cut off with knives. It seems, therefore, that nobody except the botanist knows anything about this most valuable quality of the absence of marginal spines of the true variety *sisalana*. If it be so, it is most astonishing that companies and farmers are not aware that they are cultivating for Sisal-hemp only a very inferior *Agave*—inferior, because spiny, and that means difficulty of manipulation. It is not necessary to speak here about the various advantages that a perfectly spineless variety affords to those who have daily to work with these plants.

I should be very glad if sisal planters in the sisal-producing districts of the whole globe, and especially also the young English Sisal Company in Egypt, would answer through the *Gardeners'*

good specimens of the *Selenipedium* section. Some suspended plants of *Lælia pumila* of a very fine type were in flower.

The large intermediate-house in the centre of which Palms, Anthuriums, &c., are arranged is a fine show of *Cattleya labiata*, a few *C. aurea*, *C. Bowringiana*, *C. Harrisoniana*, *Dendrobium Phalaenopsis*, *D. Dearei*, a good *Vanda Sanderiana*, *Odontoglossum grande*, *Lælia anceps*, in bloom. Others are in bud; and in a warm-house adjoining the winter-flowering *Calanthes* are in fine condition, and about to open their flowers in abundance. In all parts of the garden there is evidence that the owner and his gardener, Mr. Stocking, take a keen interest in the matter, and especially in the Orchids, which are Mr. Fieling's chief hobby.

VEGETABLES.

GLOBE ARTICHOKE.

IN raising these plants from seed, I have been usually disappointed with the results. I do not know whether or not this is general, or whether the seed I sowed was that of a very inferior variety, but out of every dozen of seedlings, scarcely two were of any value whatever, and instead of producing large heads, the majority were not larger than ordinary thistles. Artichokes are easily grown, and when propagated by side-shoots in the month of April from a good strain, a quantity of useful heads are produced the same year, forming a succession to the older plants. This method is that which I usually practice now. Seedlings grow to a gigantic size, but the heads were miserable in size. Globe Artichokes are fairly hardy in this country; but it is always safer to afford protection in the form of half-decayed stable-dung, bracken, &c., packing this round each stool for a yard or more. The plant can scarcely have too much manure, liquid and solid, just before and when growing. The litter must be removed in the spring, and the manure, with additions, dug in.

CELERY.

For many years I grew Sandringham White for an early supply of heads, and fancied that no better white variety existed; but of late years I have not been so well satisfied with it, and gave others a trial, including Dickson's Matchless White, and Champion. These varieties are this season exceptionally good, the heads being solid, heavy, and the stalks crisp eating. Of red and pink varieties, Winchester Pink and Col. Clark's have always been excellent. Winchester Pink is a fine, heavy head, and keeps in good condition very well; while Col. Clark's is a good head, and the stalks very crisp and sweet. It keeps good for a long time.

PEA AUTOCRAT.

This fine Pea has been of much value this season as a late cropper, and I know of no better. A large sowing of Autocrat was made about June 20, and several other varieties, all of which did fairly well; but the former cropped very heavily till the end of last month. The quality was passable at the last, considering the late date. *H. Markham, Wrotham Park Gardens, Barnet.*

SOWING BROAD BEANS IN THE AUTUMN.

To plant seeds of Broad Beans in November or earlier is an old practice not much carried out at this date, but it has advantages in warm, well-drained soils. The earliest dish of Broad Beans is always appreciated, and autumn-sown plants produce pods quite three weeks before February or March sowings. I give these two months, because sowing is not always possible in the first-named. There are other means of obtaining an early crop, such as sowing in pots or boxes in heat, and hardening off the plant before setting them out, but I think that Beans raised in heat are not nearly so trustworthy as Beans sown in the open ground at this season. Broad Beans may be sown in pots in the months of November and December, putting them in a cold frame, and never applying artificial heat. Grown thus, the plants grow away freely

when planted out, and are not checked as are those raised in warmth. The pots may be large 60's or small 48's, and the number of seeds may be five to seven. Employ loamy soil, and make it firm with the fingers. When Beans are sown in boxes filled with soil the roots get entangled, and in lifting for planting many are sure to be broken, and a check is caused thereby, and consequently lateness in podding.

Beans placed in pots or boxes in cold frames should not be coddled. The best lot of Broad Beans I ever saw stood in turfen pits, which are appliances rarely seen in gardens now. The overhead protection consisted of thatched hurdles, and these were put on in frosty weather, air being afforded freely in favourable weather. The seed-pots should be plunged into coal-ashes or cocoanut-fibre refuse, as by so doing there is no injury possible to the pots or the roots of the Beans. Sowings made in the open will crop as early as sowings made in frames; for although more growth may be made up to the month of March by pot-plants, the former will pod the earlier.

As Broad Beans are sown annually in drills, it is an easy matter to earth the young plants up when they push through the soil; and if charred soil, coal-ashes, and soot mixed together be strewn along the rows, slugs do little harm. In retentive soils, the warmest position should be given to the Broad Bean if required to afford early dishes. In such soils, success may also be obtained by throwing out trenches 1 foot deep, and filling with a lighter kind of soil. In very hard weather sparrows will peck the leaves, and it may be necessary to protect the plants with black thread or other means. At one time the Early Mazagan was considered the hardest variety, but there are larger and better ones now. I prefer the Green Longpods, and one which is named Green Giant is a very free bearer. White-seeded varieties are few; the Early Longpod, the Prolific Longpod, and Royal Dwarf Cluster, are hardy and trustworthy Beans for early sowings. Only new seed should be sown for early podding. *G. Wythes.*

[The fine Seville Longpod is an early variety, with pods 8 inches to 1 foot in length, but it is not so hardy as Mazagan, Green Windsor, and some others; and it should therefore not be sown in the colder parts of the country to stand the winter. Beck's Dwarf Green Gem is hardy, a great bearer, and dwarf of habit, with beans dark green in colour. *Ed.*]

BOOK NOTICE.

SEVEN GARDENS AND A PALACE, by E. V. B. (John Lane: The Bodley Head, London.)

THIS is a very charming book of gossip about old-world gardens and a stately palace. Among the gardens are those at Dropmore, Huntercombe, Maryculter, Elrick Ellon, and the Palace is that at Hampton Court. Dropmore, in addition to its other associations, is for ever associated with memories of Lady Grenville and Philip Frost, as marked a character in his way as his mistress in another. The Pines at Dropmore and the Beeches at Burnham come in for loving mention, though the horrors of Bank Holiday at the latter place are naturally repugnant. Nevertheless, it is pointed out that the Beeches are most delicious in winter or early spring when the trippers do not trouble. The authoress seems to doubt the benefit to the people that accrues from opening up these beauty spots to the unappreciative gaze of noisy cockneys. "Is it not," she says, "rather a dream than a happy reality, the belief that this going through beautiful gardens, picture galleries, or noble buildings, will in itself work out an education or enlarge and elevate the minds of the many? Must it not be that the mind of a multitude set upon their day's outing needs long cultivation and preparedness to receive such teaching?" Of course, there is some truth in this. But how is the requisite teaching to be obtained save by setting before the visitor that which is lovely, and pure, and good? Who, that is conversant with the loathsome squalor in which

so many of the poor are compelled to live—without a scrap of wholesome interest to lighten their daily toil—but must admit that the higher ideals presented to them in the garden or the park, or the picture gallery, must influence the susceptible among them for good. It is slow work, no doubt, and discouraging, but one must look forward rather than backward. One encouraging sign is the relatively small injury that is done from wanton mischief. We hear occasionally of depressing instances to the contrary, but when we think of the myriads of people who visit our national collections, or the parks and gardens thrown open by the sympathetic charity of the proprietors, we rejoice to think that the amount of wilful damage done is relatively very small. Roughs and "Hooligans" to our shame infect our streets, but they are not of the class that would visit Hampton Court or Kew. We fear that no appeal, save that of the "cat," is likely to make any impression on such an undesirable class of the community. But between these and the average "tripper," unrefined though he or she may be, there is a vast difference. We can, or ought to, sympathise with the one, for the other the police-station or the lunatic asylum is the proper abode. All this seems rather out of place in a gardening journal, but the reader must remember that the book before us is rather discursive! To its pages we send everyone who appreciates the charm of style.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Lælia Digbyana.—Since this species has shown its great value as a subject for use in hybridising, it is more frequently found in collections than was the case years ago. Honduras, whence the plant comes, possessing a warm, dry climate, this plant should now, and all through the winter, be suspended in the East India-house, and afforded full sunlight, hardly any water being needed, this being the season of rest. *L. glauca* has deliciously-scented flowers, and it should occupy a similar position in the *Cattleya*-house, and be treated like the first-named in the matter of water.

Lælia cinnabarina.—The leaves and pseudo-bulbs being now fully grown, may be kept very dry. *L. harpophylla*, a species from a cooler country, and with thin, stem-like pseudo-bulbs, should not be severely dried off for any length of time, the moister air of the house in which it is grown compensating to some extent for lack of water at the root.

Lælia elegans and *Varieties* should, if possible, be brought into a state of rest, otherwise the future growth will lack substance, and be liable to disease. The plants should be placed near the glass in a house where the warmth ranges between 58° and 65°, and be afforded water only when shrivelling is noticed. If any leaf or pseudo-bulb show signs of "black-rot," let the affected part be cut off below that point, and rub in powdered charcoal or sulphur on the wound. If the rhizome becomes affected, the case is almost hopeless, as the dormant buds are sure to be lost.

Cattleya Lawrenceana.—This plant having finished its growth, may be removed from the warm-house to a light position in the *Cattleya*-house. The potting-material should become quite dry, and remain so for a week or more before water is afforded; and during the first three months of the new year scarcely any water need be applied. If white scale at the base of the pseudo-bulbs be remarked, remove it with a stiff brush and soap-suds.

Cattleya superba.—This species will, like *Lælia Digbyana*, now be resting for a long time, and not need any water. *Cattleya Luddemanniana* thrives when hung always in the East India-house, and treated similarly to the above. Its shy-flowering character is mainly due to the lack of a long drying period. *C. Eldorado*, and the white form, *C. E. Wallisii*, also requires to be treated in a like manner.

Odontoglossum Londesboroughianum.—When this plant can be induced to bloom it is a pleasing one, and (for this genus) as was apparent from a recent exhibit at the Drill Hall; its rambling habit of growth is like that of *Oncidium macranthum*, and this should be borne in mind when about to pot any imported or other specimen. Just now the plant should begin to rest, and be placed near the

glass in a light and cool part of the Cattleya-house, gradually diminishing the supply of water as the leaves—which are generally deciduous—turn yellow and fall away.

PLANTS UNDER GLASS.

By T. EDWARDS, Plant Foreman, Royal Gardens, Frogmore.

The Fernery.—As most stove and greenhouse Ferns are now resting, less water at the root is required, and the humidity of the Fern-houses should be lessened. Ferns treated thus have hard fronds, which last longer when removed from the plants than those that are made tender with warmth and moisture. With the exception of some deciduous species, Ferns should not be allowed to become quite dry at the root, or the fronds will shrivel and assume a rusty appearance. When it is necessary to afford water, let it be enough to saturate the ball, particularly pot-bound plants, which it may be necessary sometimes to stand in a vessel of water for a quarter of an hour. Much water afforded to Ferns at the winter season soon sours the soil, and thus injures growth. If a fernery is much visited it may be advisable to remove decayed and discoloured fronds, otherwise it is better to leave them undisturbed. Young plants in 60's will need regular attention as regards water, and stock to be kept up by pricking off seedlings in quantity. Fern spores may now be sown in pans filled with sandy loam and peat, and on damp surfaces, such as soft bricks and lumps of sandstone stood in water, which should be covered when practicable, with handlights, &c., and be kept constantly damp until germination takes place.

Begonia Gloire de Lorraine.—Plants in flower or bud should be afforded weak manure-water occasionally. Let the plants be kept close to the glass, and when fully in flower, remove them to a house having an intermediate degree of warmth. If propagation by means of the leaves is intended, choose a time for doing this when the plants are in full vigour.

Camellias should be sufficiently supplied with water at the root, or the flower-buds will drop. Sponge the leaves, and allow the plants as much light and air as possible consistent with the welfare of the other plants in flower.

Hyacinths and Narcissus for growing in glasses and bowls should now be put in, or the bulbs will become weakened, and the single-flowered early varieties are the best. Fill the glasses nearly full with rain-water; place the bulb so that the base does not quite touch the surface, and place them in any cool, dark place secure from frost, until the roots have reached the bottom of the glass, which requires to be filled up from time to time.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Forcing.—If Asparagus, Rhubarb, and Seakale, are required by the family about the end of the year, preparations must be made forthwith. Three weeks ago, I alluded to the preparation of materials for making hot-beds, and if the tree-leaves have been similarly treated, the beds may be made. Generally, the foliage is later this year in decaying, owing to the mildness of the weather. It is useless to advise only one method for forcing, as the work has to be undertaken according to the conveniences at the disposal of the gardener. All roots force better if a slight rest can be afforded them.

Seakale.—Where only a limited number of roots can be grown, a few good dishes of this delicious vegetable may be obtained, but to have roots for forcing throughout the winter, much space is required. Forcing in open plantations has much to recommend it, as the quality of the produce is finer than from lifted roots, but growth is hardly quick enough under this method for affording a large daily supply. With this method the ground is lightly forked between the crowns, and all decayed leaves and rubbish removed; then soot and coal-ashes are placed over the crowns, and then the Seakale-pots. The spaces between the pots is then filled with prepared fermenting material, which will afford a temperature of 50° to 60°. Trial stakes should be stuck into the beds at intervals of 6 feet, and these should be tested daily. If found to be too warm, it should be opened out till the warmth reaches the normal, as overheating would soon ruin the growths. There will be no danger of the beds falling below the desired temperature, unless very severe frosts or cold winds set in; then, if on the decline, a thick

covering of litter should be added, and if this does not heighten the temperature fresh fermenting material must be substituted for the old. For indoor forcing, any house or structure in which a temperature of 55° can be kept up, is suitable for this vegetable. If the Mushroom-house is spacious enough, no better place can be found. Let several small beds of rather moist soil be put in at fortnightly or tri-weekly intervals, and insert the Seakale-roots in these. For those who may not have a house or pit at command, a hot-bed of leaves and litter should be made 3 feet above or below the ground, placing a strong two or three frame-light over it. Then put into it a 10 inches layer of rich soil, which has been passed through a ½-inch sieve. Insert the roots close together when the soil has got warmed: cover the frame so that light cannot enter. The method which perhaps entails the smallest amount of labour is that of placing from 12 to 15 strong young roots in a 15-inch pot partly filled with soil; other pots of the same size being placed over them, and the light quite excluded. Place these in a forcing-house or pit not far from the hot-water pipes.

Asparagus.—If a pit exists that is heated by hot-water pipes, the return pipes passing along at the bottom, a platform of boards may be constructed which will allow of a bed of manure 2 feet thick being placed on it. When the heat has risen, some light, rich soil should be spread over the surface to the depth of 4 inches, and the roots planted when the temperature is about 60°. Cover the roots with 6 inches of leaf-mould, and afford a sprinkling of water to settle the soil round the roots. Keep the pits closed till heads push through, and raising the degree of warmth gradually 10° at this stage. Other methods as advised for Seakale hold good for Asparagus.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of PORTLAND, Welbeck Abbey, Worksop.

Fruit-trees in Pots.—The latest matured being now in a condition fit for repotting, the operation should be carried out forthwith. Those which occupy pots of the largest sort, and cannot therefore be repotted entire, should have the balls reduced in size by picking out the soil at the sides, and be returned to the pots after cleaning, &c. Young trees that are being grown on, may have slightly larger pots. Let good turfy-loam with plenty of lime-rubble and charred garden refuse be employed as a potting soil, some bone-meal, and soot sufficient to impart blackness to the whole being added. The drainage must be efficient, and the potting firm. Stand the trees in a sheltered spot, plunging the pots in litter or partially decayed manure. As these fruit-trees are worked on stocks which make roots freely, they are quickly re-established after repotting. A good application of water now will keep the soil moist for several months.

Vines.—Let the pruning and cleansing of Vines be carried out in the succession vineries as fast as the leaves fall, nothing conducing more to securing a strong and even break than a long rest between pruning and the commencement of forcing. Where the wood is perfectly mature, the shoots of the shyest fruiting varieties may be cut back to one or two buds; but if the shoots are sappy, it will be advisable to allow a few more buds. The shoots of Gros Guillaume and Duke of Buccleuch Vines should be left in fair amount, or the crop may not be satisfactory. After pruning, remove only the loose portion of the old bark, and cleanse the rots with soft-soap and hot-water.

Vine Borders.—Grapes of the best quality are not produced by Vines growing in unwholesome soil. If a border is found on examination to be in a soddened and unhealthy state, it may be renovated at this season. In carrying out the work, the age of the Vines must be considered, as well as the condition of the soil. If the latter is found to be very adhesive, and there are but few roots, every one, however small, must be saved as far as possible. Where the roots go to a great depth, these must be dug up with care, and brought near the surface. In dealing with aged Vines, it may not be advisable to disturb them greatly, but to select a few healthy roots, carefully tracing them out, relaying them in a porous compost, in which they will soon make progress, and send out other roots. These roots should be assisted with manure and permitted to extend, and thus add to the fruitfulness and vigour of the Vines. Borders in which young Vines are growing should have a trench

2 feet in width and depth thrown out along the front, and then the roots should be carefully undermined, working inwards towards the vinery, saving all roots, and relaying them in layers in a compost of turfy loam, half-inch bones, soot, and burnt refuse, with a large addition of mortar-rubble and road-grit. The aim should be in making a border or renewing a Vine to use a compost that will afford a fairly rapid outlet for the water.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

The Utilisation of Liquid Manure.—In gardens where there exist tanks for soft-water storage, stable and cowshed drainings, the latter are seldom utilised on the farm, but the overflow is allowed to run to waste in the ditches; the gardener should seize the opportunity to apply it to his orchard-land, and the present is a good time to do this. When rain-water and manurial drainings are led into a common tank no further dilution is needed, otherwise water must be added in the proportion of one-half. Let the soil under each tree be saturated as far as the branches extend. It may be necessary in hard soils to make holes from 3 feet to 4 feet deep, and 2 yards apart, with an iron bar, and to fill these holes again and again with manure-water until the soil is well moistened. Such applications have a restorative effect on the trees, especially on those that are aged. This kind of work may go on at various times during the winter, whenever a supply of manure-water is available. Failing the application of manure-water, dressings of farmyard-manure may be applied, and pointed in. In orchards under grass, the turf should be stripped 2 or 3 inches in thickness, chopped into small pieces, and distributed over the bared surface, manure being spread over this, and pointed in. Should the roots be very close to the surface, the soil may merely be loosened with a fork, and the turf and manure laid on it. Trees not requiring such thorough treatment, will be benefited by top-dressings of artificial manure, decayed garden-refuse, road-scrappings, &c. The rule is to wait for frosty weather before carrying out the above details; but when labour and the requisite necessities exist for so doing, I advocate its being done at the first favourable opportunity that presents itself.

Fruit-room.—The fruit should be examined, and specked and decaying examples cleared out at least once a month. Be very careful in handling ripe Pears. As time goes on, more space will be available for spreading out the remaining fruits on the shelves.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of ILCHESTER, Abbotsbury Castle, Dorsetshire.

Autumn pruning of trees.—The Sycamore, Maple, Walnut, Horse-Chestnut, &c., may be safely spurred and cut back at the fall of the leaf when cutting back becomes necessary by reason of their encroachment on other subjects. As the lower branches are those most in the way, these may be swung off by placing a strong rope over a fork above and on to the branch to be lopped. Tied in this way, a man on the ground may easily clear the branches of any shrubs underneath. In cases where it is only necessary to remove a portion, always cut back to a small shoot, thus avoiding as far as possible much disfigurement of the trees. In most trees having big leaves the sap rises very early in the year, and wounds bleed considerably for several weeks after lopping. This loss of sap may be avoided by pruning late in the year. Always cut neatly, and in a slanting direction, and coat the wound over with lead-coloured paint.

General work.—The weather being favourable for bedding plants standing in frames and greenhouses, air should be freely admitted, and the soil on the surface of the pots stirred a little. Keep the frame scrupulously clear of decaying matter. Keep the warmth in the pits and frames at 65° to 70° by sun-heat, and 45° to 50° at night. All plants recently potted should be established forthwith. Pampas Grass and Eulalia plumes, the inflorescences of Pennisetum macrorum and Briza maxima, when dried, are well adapted for winter effects. Shoots of Myrtle and Ruscus androgynus afford pleasing effects used in conjunction with Chrysanthemum flowers, and they last for several weeks if the water be changed occasionally.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Nov. 17	Brockburn Horticultural Society's Chrysanthemum Show (2 days). Middleton Chrysanthemum Society's Show (2 days).
TUESDAY,	Nov. 20	Royal Horticultural Society's Committee: Meeting at the Drill Hall, Westminster.
THURSDAY,	Nov. 22	Dundee Chrysanthemum Society's Show (3 days).
FRIDAY,	Nov. 23	Aberdeen Chrysanthemum Society's Show (2 days).

SALES.

MONDAY to FRIDAY, Nov. 19 to 23.—Dutch Bulbs at Protheroe & Morris' Rooms.
 MONDAY, Nov. 19.—Bulbs, Palms, Plants, &c., at Mr. Stevens' Rooms, 38, King Street, W.C.
 TUESDAY, Nov. 20.—Annual Clearance Sale at the Hale Farm Nurseries, Tottenham, by order of Messrs. T. S. Ware, Ltd., by Protheroe & Morris, at 11 o'clock.
 WEDNESDAY, Nov. 21.—Liliums from Japan, Rose Trees, Hardy Ornamental Shrubs, &c., at Stevens' Rooms.—Clearance Sale of 50,000 Fruit Trees and other Stock at The Hounslow Nurseries, Hounslow, by order of Messrs. S. Spooner & Sons, by Protheroe & Morris at 12 o'clock (3 days).
 THURSDAY, Nov. 22.—Bulbs, Plants, Azaleas, and Palms, at Stevens' Rooms.
 FRIDAY, Nov. 23.—Imported and Established Orchids at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—41° 6'.

ACTUAL TEMPERATURES:—

LONDON.—November 14 (6 P.M.): Max. 52°; Min. 46°.

November 15.—Dull; mild; drizzling rain.

PROVINCES.—November 14 (6 P.M.): Max. 49°; Southern Counties; Min., 41°, N.E. Scotland.

A SHORT time since one of our correspondents, alluding to the report of the Conifer Conference, and to the list of Conifers given in that publication, regretted that in it no descriptions of particular species were included. That deficiency is supplied by the second edition of *Veitch's Manual of the Conifere*, prepared by Mr. A. H. KENT.* Though called a second edition, it has been so much revised, and so greatly added to, that it may fairly be considered a new work. "I have endeavoured," says the author, "to collect from the best available sources every item of information that should prove useful and interesting to amateurs . . . and also to foresters and horticulturists. The descriptions of the species have been drawn up from fresh materials, and from an inspection of the subjects themselves wherever practicable, and trees of the same species growing in different and distant parts of Great Britain, have been visited with this object."

The earlier pages are devoted to the general morphology of the order, and to so much of the minute anatomy as is requisite for understanding the structure of the timber, and for the discrimination of the species.

The papers contributed to the Conifer Conference by Professor MARSHALL WARD and by Mr. BLANDFORD on the diseases of Conifers, and on the insects injurious to these trees, are laid under contribution with due acknowledgment. Subsequent sections are devoted to the timber and resinous secretions, and their extraction for commercial purposes. The geographical distribution of the species is also briefly considered.

The systematic description of the several species cultivated in Great Britain follows. *Cephalotaxus* is properly placed next to *Ginkgo*, and the arrangement generally is that given in

the Conifer Conference Report. The descriptions of the species are clear, accurate, and admit of easy comparison.

The Pine known in English plantations as *Pinus insignis* is now relegated to *P. radiata*, on the ground of priority. It is a matter of doubt, however, whether the name *californica* has not really the precedence. In any case, there are certain trees about the country which are more hardy than others, and these are often named *radiata*, while the more tender ones are called *insignis*.

The singular and highly interesting *Pseudolarix Kämpferi* is placed under a new genus—*Laricopsis*—for no other reason than that the author objects to the use of a "negative name that connotes nothing definitely."

The Douglas Fir is likewise called *Abietia*, because *Pseudotsuga* is an uncouth, barbarous name, half Greek, half Japanese, "utterly bad in construction." If new names were to be given in all cases where the adopted name has been improperly framed, the additions to the synonymy would, we fear, be extremely numerous. In fact, a name is, or should be, arbitrary—a name and nothing else. It were better well constructed, but we are not justified in rejecting it if faulty. Mr. KENT shelters himself behind Art. 60, sect. 4, of the Paris laws, but he has overlooked p. 40 of the *Nouvelles Remarques*, wherein ALPHONSE DE CANDOLLE, supported by ASA GRAY, admits that he was wrong in changing such names. Mr. KENT, moreover, places in his genus *Abietia*, the *Keteleeria Fortunei*, and, inferentially, the other Chinese members of that genus; in so doing, the author is quite within his rights, but we cannot share his views in this matter, nor has he, in our opinion, given sufficient reason for the change.

Biographical notices of botanists, collectors, and others who have contributed to our knowledge of Conifers are given, and add to the interest of the volume. Numerous illustrations are supplied, as well as a copious bibliography, and three indexes. The work has been carefully printed, so that errors are very few, one such we noticed in the case of *Clanbrassil*, which is printed *Clanbrasil*.

We have but to look back to previous treatises on Conifers to see how much of the confusion which formerly existed has been cleared up, and vagueness and error dispelled. We congratulate Messrs. VEITCH and Mr. KENT on having produced the best and most serviceable book on Conifers in the English language. It is one which no lover of Conifers can afford to dispense with.

Woburn
Experimental
Fruit Farm.

THE Second Report on the working and results of the Woburn Experimental Fruit Farm has been published by the Duke of BEDFORD and Mr. SPENCER PICKERING. Three years have elapsed since the issue of the first report, and all who appreciate the nature of the work upon which the Duke of BEDFORD is engaged will welcome the present volume. It contains the most elaborate compilation of carefully tabulated figures, and is an honest, praiseworthy attempt to unravel some of the mysteries connected with the subtle influences of growth, and fertility of some of our hardy fruit trees.

The results, so far, of the experiments made by Mr. PICKERING and his lieutenant, Mr. CASTLE, are not to be regarded as wholly complete or perfectly satisfactory; but the subjects dealt with are such as will interest all concerned in fruit culture.

A great deal of valuable information is given in regard to the experience with the Black Currant-mite, for which there appears to be no satisfactory remedy, beyond the destruction at once of all infested bushes, or the cutting down to ground thereof.

Strawberries have been treated with various manures, some of which have given contradictory results, chiefly owing to the influences of adverse seasons, droughts, and other causes. It is open to doubt whether Strawberries can be profitably retained up to five years or longer. Although the writer is favoured with an exceptionally good Strawberry soil, he finds that the third crop exhausts the plants, and produces berries below par afterwards.

In the case of manurial experiments for bush fruits, the use of manure is deprecated. It is not stated quite clearly how applied, but in our own experience we have very decided opinions in favour of manure applied periodically in the form of surface-mulchings.

We are again not in accord with summer pruning, being firm believers in the results to be obtained by the judicious removal of superfluous growths from the interior part of the bush or young tree, but not in stopping the leaders.

We should also like to substitute the word root-lifting for root-pruning, and equally as carefully practised. We are glad to note the following:—

"The effect of growing grass round the young trees is one of the most striking of our results. The grass-grown trees are, after five years' growth, scarcely bigger than when planted, and the actual increase in weight which they show is about eighteen times smaller than in the case of similar trees in tilled ground. We believe one of the main causes of the effects to be due to the large increase in the evaporation from the soil which is known to be produced by grass, the trees being thereby made to suffer from drought, with consequent deprivation of other nourishment as well, but we have reason to consider that the grass acts, also, by preventing the access of air to the roots of the trees."

Diseases of Plum-trees are exhaustively dealt with. The often asserted good to be obtained by change of Potato-sets is not upheld or confirmed by experiments carried out at Woburn. We ourselves are, notwithstanding, still sceptical.

However, it appears to be the main object of the work at Woburn to investigate the fundamental principles on which the success of fruit-culture depends, and the opinions expressed are deserving of careful and thoughtful attention.

The Brussels
Botanic Garden.

THE garden to which we recently referred, is in danger of being utterly spoilt by the construction across it of a railway intended to unite the Nord to the Midi stations. If this railway be made according to the proposed plans, it will be a frightful disfigurement, and cause irreparable injury to the collections in some of the houses, especially the great Tree Fern-house, which is one of the glories of the garden. Certain species, including the rarest and most valuable, are planted-out, and their successful transplantation is all but impossible. For others, no shelter can be found, and their removal will infallibly be most injurious to them. The house for stove-aquatic plants, which forms so striking a feature in the centre of the garden, will be demolished. Further, the finest trees of the garden, already so deficient in shade, must be sacrificed. Part of the line will be higher than

* *Veitch's Manual of the Conifere*. A new edition, by A. H. KENT. (VEITCH & SONS, Ltd., 541, King's Road, Chelsea.)

the actual level of the principal walks, and the junctions to be made will have a most deplorable effect. These grounds, so much appreciated by the Bruxellois, will lose the artistic effects which are so delightful.

In the part where the line is to be beneath the surface, the soil above will not be deep enough even to allow turf to grow, and this for a space at least 60 feet wide, and in the most frequented and conspicuous position in the garden.

It is not for us as outsiders to consider the utility of this railway as regards the "public interest," but in the name of science as well as in that of those who are anxious to retain intact a work of which Belgium has a right to be proud, we hope that modifications may be made in the project in question, so as to prevent the disfigurement of the gardens, and ensure the preservation of the treasures in the Brussels Botanic Garden.

Since 1870, when it was acquired by the State, considerable sums have been expended, numerous improvements have been made, and various attractions have been introduced, so that now it ranks among the most important establishments of the kind in Europe. It is threatened by an act of vandalism which will seriously injure the public property, and prove disastrous to botanical horticulture.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Floral and Fruit Committees of this Society will be held on Tuesday, November 20, in the Drill Hall, James Street, Westminster, in the hours 1 to 4 P.M. A lecture entitled "Mistakes in Fruit Culture" will be given by Mr. GEO. BUNYARD, V.M.H., at 3 o'clock.

—We have received particulars concerning meetings and exhibitions which have been provisionally fixed for 1901. It will be noticed that there is to be one Conference at Chiswick next year, the subject of which will be Lilies. The dates are as follow:—January 15, 29; February 12, 26; March 12, 26; April 9, 23; May 7, and May 22, 23, 24 (Temple Show); June 4, 18; July 2, 16 (Conference on Lilies), 30; August 13, 27; September 10, 24; October 10, 11, 12 (Crystal Palace), 15, 29; November 12, 26; December 17. Examination in Horticulture, April 24.

HORTICULTURAL CLUB.—The usual monthly dinner and conversations took place on Tuesday evening last; the chair was occupied by Mr. HARRY J. VEITCH, vice-chairman of the Club, in the unavoidable absence of Sir J. D. T. LLEWELYN. There was a large attendance of members, including the Rev. W. Wilks, the Rev. J. H. Pemberton, and Messrs. Watkins, C. E. Shea, Garcia, Shoults, Bunyard, Walker, Salmond, Monro, A. Pearson, C. E. Pearson, Assbee, Notcott, Pinches, G. Paul, Milligan Hogg, Ker, Hudson, Selfe-Leonard, Wright, and the Secretary. A paper was read by Mr. HARRY J. VEITCH on "Egyptian Vegetation;" he gave an interesting account of the visit he paid to Egypt last year, and of the plants, trees, and shrubs noticed by him. An animated discussion took place, and many points of interest were raised by the members present. A cordial vote of thanks was offered to Mr. VEITCH for his paper.

ROYAL BOTANIC SOCIETY.—Mr. R. HEDGER-WALLACE is about to deliver four lectures on the "First Principles of Colonisation and Plantation," to be delivered in the Museum at the Gardens, on Friday afternoons, November 16, 23, 30, and December 7, at 3 o'clock. Introductory Lecture, November 16: The General Principles of Colonisation and Plantation; Lecture II., November 23: The Cultivation of Food Plants and Industrial Plants; Lecture III., November 30: Some Commercial Food Plants; Lecture IV., December 7: Industrial Plants. Note.—The object, therefore,

of this short course is to indicate, by reference to certain groups of commercial plants, the various factors that should be considered and determined before anyone either engages personally in the cultivation of such commercial plants in any British colony or dependency, or invests capital at home in such ventures abroad as depend entirely on the successful and profitable cultivation of some commercial plant or crop.

EXAMINATION IN HORTICULTURE.—The Royal Horticultural Society will hold its next examination in horticulture on Wednesday, April 24, 1901. For syllabus, apply to the Secretary, Royal Horticultural Society, 117, Victoria Street, S.W., enclosing a stamp.

THE SEASON.—Roses, Dahlias, Pelargoniums, and other tender flowering plants in the London district were cut by frost on Saturday night, November 10. Until this late date such plants had continued to yield flowers in some quantity.

FRUIT PACKING.—Growers are very apt to complain of the low prices they obtain for their produce, but this is not infrequently the result of their own carelessness. When fruits are handled like so much gravel or coals, as they often are, it is no wonder they become bruised and unsaleable except at ruinous prices. But if the fruit be carefully gathered, sorted, and packed, the prices obtained will be higher. We have an illustration of this in the shape of a box of Apples from the Duke of BEDFORD's fruit farm at Ridgmont. It is a small wooden box, containing twelve carefully-selected Apples, resting on a bed of wood-wool, which is covered by a sheet of tissue-paper. Each Apple is wrapped round by a broad band consisting of several folds of tissue-paper. By this means the fruit is not bruised in transit, and the Apples have a most appetising appearance. A reasonable price is asked, and the boxes need not be returned. As each box is conspicuously marked with name of the fruit farm, the purchaser has a guarantee of the quality of the fruit. All that we can suggest further is, that the name of the Apple—in this case Cox's Orange Pippin—should be placed on the box. Small boxes like this would be eagerly bought by householders once it were known where they could be obtained, and even the greengrocers would in time realise the fact that selected fruit carefully handled would be more profitable than the miscellaneous stuff they sell under the name of fruit.

THOMPSON'S "GARDENERS' ASSISTANT."—The second volume of this standard book, now edited by Mr. WILLIAM WATSON, Assistant Curator at Kew, has lately been issued by the Gresham Publishing Company. It contains chapters on heating, propagation, transplanting, pruning, the formation of a flower-garden, together with details relating to trees and shrubs, herbaceous perennials, aquatic plants, and annuals. This enumeration suffices to show the importance of this section, and the names of the contributors afford an ample guarantee that the reputation of this standard book is as high as ever it was. Every garden library should have a copy of this book on its shelves, for it is the most complete work of reference that we have.

DOUBLE-FLOWERED WHITE LAPAGERIA.—Mr. S. H. WOODHAM, The Gardens, Cottingly House, Kingston Hill, sends a flower of Lapageria in which the six outer segments are normal, but the stamens are all more or less petaloid. All the other flowers on the plant present their usual appearance. It might be well to layer the branch producing this flower, though it is by no means certain that it will produce such a flower again.

BEN CANT MEMORIAL PRIZE FUND.—The following additional contributions have been promised:—Mr. C. E. SHEA, £1 ls.; Colonel PITT, £1; Rev. H. B. BIRON, 5s.; Mr. R. E. WEST, 10s. 6d.; the Rev. H. A. BERNERS, £1.

JAPANESE PLANTS.—At a sale at WILLIS'S Rooms, on the 6th inst., Messrs. ROBINSON & FISHER sold by auction a quantity of Japanese plants and trees imported by Messrs. YAMANAKA & Co. A Chabo Hiba, 2 feet 6 inches in height, reputed to be 200 years old, was sold for £11. Another of the same sort, but a green variety, in the shape of a tree overhanging a cliff, 9 ins. in height, and said to be sixty years old, went for £6 16s. 6d. A similar tree having regular branches, 2 feet 4 inches by 3 feet 4 inches, and between 130 and 150 years old, was purchased for £16 16s. A golden Chabo Hiba, 20 inches high, and seventy years old, sold for £5 15s. 6d.; and a wonderful specimen of Pine—*Pinus parviflora*—went for £14 3s. 6d. The latter has well-balanced and regular branches, and trunk of the shape of an octopus. Its height is 35 inches, and it was stated to be 250 years old. All the trees are grown in pots. The sale was continued the next day.

SERBIAN PLUMS.—From Belgrade we learn that during the present year, dried Plums to the value of 6,000,000 francs have been exported from Serbia, and Plum jam to the value of 2,400,000 francs. In the year 1890, dried Plums were exported to the value of 7,300,000 francs, and jam to the extent of 1,300,000 francs. In addition to all this, considerable quantities of fresh Plums for use as table fruit, or for the manufacture of spirits, are exported each year. A considerable trade at one time existed with this country in dried Plums, but that has been swept away by exports from France and California, of fruits which have undergone a double drying process.

"BOYS OF THE EMPIRE."—A new paper, priced at 1d. weekly, has just been brought out with this patriotic title. The editor is Mr. H. H. SPICER, and he caters for "British boys all over the world," offering them tales of school-life and of adventure abroad in abundance. Time only can tell if this new paper will be a success, but it deserves our best wishes so far, the first number being full of good and appropriate reading. The publisher is Mr. ANDREW MELORE, 16, Pilgrim Street, E.C.

DUNDEE CHRYSANTHEMUM SOCIETY.—The forthcoming show to be held on the 22nd, 23rd, and 24th inst., promises to be a great success. The special features include a Challenge Vase, recently presented to the society by the Town Council, to be offered in an open class. Another feature of the exhibition will be a group of plants, cut flowers, fruits, and vegetables, given by members of the society and others. These will be sold on the second day of the exhibition, and the proceeds handed over to the Dundee Royal Infirmary. The band of H.M. Grenadier Guards, who have recently returned from South Africa, will be present. Mr. W. P. LAIRD is the Hon. Sec.

MR. W. H. STANSFIELD, a nurseryman of Southport, has just been elected a member of the Town Council there. In his election address he promised to support a "more judicious expenditure of the large sum annually granted to the Parks Committee."

PEAR DOYENNÉ DU COMICE.—This excellent Pear, now in perfect season, was rather tardily awarded an Award of Merit by the Fruit Committee of the Royal Horticultural Society on the 6th inst. The variety is so well known that many gardeners will be inclined to wonder that its merits have not been acknowledged in such a manner long ago.

NERINES AT THE DRILL HALL.—M. ELWES, the exhibitor of the pretty group of Nerines on the occasion of the last meeting of the Royal Horticultural Society, states that he showed only one potful of imported bulbs, the others being crosses of his own raising. The differences in favour of the latter were very great. Our reporter erred in supposing that the entire group chiefly consisted of wild varieties.

THE NORTH PECKHAM AMATEUR CHRYS-ANTHEMUM SOCIETY has just held a very successful exhibition, by means of which it is hoped the Society will be able to contribute a considerable sum of money to charitable purposes.

STOCK-TAKING: OCTOBER.—That war "tells" all round is made evident in the Board of Trade Returns for October, from which we learn that, although there was one more working day in the past month than in the same period last year, the exports show in many instances a heavy decrease—saved only, or balanced, by shipments of coal, and ship-building for foreign owners. In imports there was a large increase on last October's total. The value for October, 1899, was £44,130,818, against £48,495,608 in the past month—an increase of £4,364,790. The following are our usual excerpts from the summary and table of the imports:—

IMPORTS.	1899.	1900.	Difference.
	£	£	£
Total value ...	44,130,818	48,495,608	+4,364,790
(A.) Articles of food and drink—duty free ...	15,621,108	16,769,194	+1,147,986
(B.) Articles of food & drink—dutiable	3,300,474	3,736,379	+435,905
Raw materials for textile manufactures ...	4,768,535	6,196,960	+1,428,425
Raw materials for sundry industries and manufactures	5,770,023	6,847,518	+1,077,495
(A.) Miscellaneous articles ...	1,439,971	1,265,025	-174,946
(B.) Parcel Post ...	80,251	80,210	+4,980

Wheat, Wheat-flour, and Barley show a large increase, as do also bacon and cheese—the latter from Canada. Tea and wine fell off, as did Tobacco, whilst textile materials exhibited a great rise—Cotton figuring for something like £1,628,560. Wool gave way, in company with flax and hemp—jute showing a gain. Timber increased its import value by nearly £860,000; and fancy goods for Christmas disposal marked an improvement. The figures relating to fruits (raw and dried), roots, and vegetables are this month very interesting—due notice will doubtless be taken of the returns relating to dried fruits, Potatoes, and a few others. The figures are as follows:—

IMPORTS.	1899.	1900.	Difference.
	Bushels.	Cwt.	Value.
Fruits, raw:—			£.
Apples ...	840,744	368,456	-62,560
Apricots and Peaches .	.....	824	+2,243
Bananas... bunches	.....	126,292	+53,048
Grapes ...	284,666	175,182	+30,035
Lemons ...	95,416	42,579	-6,105
Nuts—Almonds (cwt.)	39,736	35,496	+16,823
Others, used as fruit (value) ...	.....	£129,728	+7,928
Oranges ...	87,879	42,279	+6,661
Pears ...	74,152	73,134	+15,818
Plums ...	46,735	9,444	-12,280
Unenumerated... ..	196,968	39,346	-50,008
Fruits, dried:—			
Currants, home consumption ... cwt.	294,193	108,526	+574,799
Raisins	254,928	310,847	+278,582
Vegetables, raw:—			
Onions ... bush.	970,127	831,728	-18,682
Potatoes ... cwt.	325,595	995,751	+113,267
Tomatoes ... ..	..	66,061	+54,296
Vegetables, raw, unenumerated value	£100,613	£48,598	-52,045

Turning to the figures representing the values for the past ten months, we find that these total up at £460,134,971 for the ten months ending with October, 1899, against £427,646,786 for the ten months just expired—or an increase of £27,511,815. We come now to the—

EXPORTS

for October, the value of which was £24,742,930, against £23,699,021 for the same period last year—a gain of £1,043,909. The minus quantities are to be found in living animals, yarns and textile fabrics, metals and articles manufactured therefrom, excepting machinery and ships, and machinery and millwork. The exports to India, China, &c., fell off, as may well be understood from the circumstances affecting trade in those regions. It may be very satisfactory to be told by one of our great commercial competitors that our manufactures are all round the best; it will be more pleasant to record the fact, by-and-by, that we once more rule

C. × Gertrude Hollington, 23 guineas; C. × Alfred Hollington, 22 guineas; C. venustum Measuresianum, 48 guineas. Small plants of hybrids of *Lælia Digbyanum*, with the best *Cattleyas*, found much favour, ranging from 10 guineas to 46 guineas, the latter price being obtained for L.C. × *Hardyana* × L. *Digbyanum*. The best *Odontoglossums* and *Dendrobiums* also realised good prices. Most of the principal buyers were represented both from the north and south, and the second day promises to be similarly successful. Mr. HAROLD MORRIS was the auctioneer, and he conducted the sale in a very clever and painstaking manner.—The total amount of the sale amounted to £4,666.



FIG. 112.—JASMINUM ANGULARE, A NATIVE OF THE TRANSVAAL: FLOWERS WHITE. (SEE P. 361.)

the market. The value of the exports for the past ten months is £243,214,685, against £218,050,248 for the same period last year—or a gain of £25,164,467.

THE SALE OF THE ASHFORD COLLECTION OF ORCHIDS.—The first day's sale of G. SHORLAND BALL'S Orchids at Ashford, Wilmslow, by Messrs PROTHEROE & MORRIS, on Tuesday, November 13, resulted in a record total of over £3,000. Among the principal plants sold were *Cattleya labiata*, 85 guineas being given for a plant in flower, a smaller plant realising 50 guineas; *Lælia præstans alba*, unflowered, 60 guineas; *Cypripedium insigne* Sanderæ, 100 guineas; *C. callosum* Sanderæ, 120 guineas, and smaller ones proportionately high prices; *C. insigne* Harefield Hall variety, 40 and 45 guineas respectively for the best; *C. insigne* Luciani, 90 guineas; *C. Lawrenceanum* Hyeaunum, 55 guineas; *C. insigne* Bohnhoffianum, 56 guineas;

THE POPLARS, AVENUE ROAD, LONDON, W.

[SUPPLEMENTARY ILLUSTRATION.]

WE have on several occasions remarked on the beauty of the garden of Mr. Ludwig Mond, situated near to Regent's Park, so successfully managed as to minimise the evil effects of the atmosphere of London. A great specialty are the Orchids, good examples of which are usually seen at the Royal Horticultural Society's Show at the Temple, and which compare very favourably with Orchids from country gardens.

The plant houses have at almost all seasons some showy and interesting plants in flower, and in the conservatory a display and an interest is maintained by arranging the flowering plants of the season with Palms and others with handsome foliage. At the back of the plants are beautiful pieces of sculpture, and in front Mr. Clarke, the

gardener, arranges the floral displays, one of which is represented in our Supplement. In this group there were, at the time it was taken, specimens of *Cymbidium Lowianum*, one of *C. Tracyanum*, several of *Cattleya Mossiae*, *C. Mendeli*, *Laelia purpurata*, *Odontoglossum crispum*, *Miltonia vexillaria*, *Brassia verrucosa*, *Angraecum modestum*, *Dendrobium Farmeri*, and other showy species.

At the present time the show consists of a fine collection of *Cattleya labiata*, some *Odontoglossum grande*, *O. Rossi majus*, *Oncidium Forbesii*, various *Cypripediums*, &c.

In the other houses, in flower are a number of varieties of *Cypripedium insigne*, *C. x Sallieri*, *C. Charlesworthi*, and some crosses. In one house an interesting hybrid is in flower, the result of hybridising *Cattleya Harrisoniana* with *Laelio-Cattleya x elegans*; and in other houses varieties of *Laelia anceps*, both white and coloured, were remarked; also a quantity of *Cymbidium Lowianum* showing flowering growths, another of *Cœlogyne cristata alba* and *C. c. Lemoniana* in fine condition.

The *Odontoglossum*-house here has produced quantities of flowers, but Mr. Clarke thinks that in London, the close, moisture-holding staging may be done away with during the winter with advantage to the plants, as the only difficulty he finds is the excessive moisture of the air during foggy or dull weather; consequently he has had removed the close staging, and stood the plants on an open one, and below the stage bare earth.

Mr. Mond's residence is rich in art treasures, and from its windows on the garden side a pretty view is obtained that extends over the smooth sward to clumps of *Rhododendrons* and other shrubs, and a pretty rockery, in which are grown all old-fashioned flowers, and especially those mentioned by Shakespeare, whether of wild or garden plants.

JASMINUM ANGULARE.*

THIS elegant Jasmine has much interest at the present moment, as being a plant widely distributed from the Cape Colony to Natal and the Transvaal. The material for woodcuts (figs. 112, 113) was obligingly forwarded by Mrs. Birks, Kingsbridge Vicarage, South Devon. This lady raised the plant from seed obtained in 1880 from King William's Town. It is now growing against the side of the house, and has attained a height of about 11 feet, and the sprays produce sometimes from twelve to eighteen flower-buds. The flowers are white, like those of the common Jasmine, but are a size or two larger, measuring 1½ inch across. It blooms abundantly every year, but would probably not be hardy in the north.

THE WEATHER IN WEST HERTS.

DURING the past week we have experienced some of the warmest, and also some of the coldest, specimens of November weather. There was no really cold day, but on three consecutive nights the exposed thermometer showed from 6° to 12° of frost, the latter being the lowest temperature as yet registered by this thermometer during the present autumn. Notwithstanding these frosts, the ground is warm for the time of year, being about 1° warmer at 2 feet deep, and 3° warmer at 1 foot deep, than is seasonable. Rain fell on five days to the total depth of ¾-inch. Water is now coming freely through the bare soil percolation-gauge, but none has as yet passed through that on which short grass is growing. For four days the air was unusually dry for the season, and on two of them the percentage of humidity was only 65—complete saturation being represented by 100. On the same four days the sun shone on an average for nearly five hours a day, but the previous six days were altogether sunless. The frost of the 11th inst. completely killed my

Dahlias—which is exactly a week later than the average date of their destruction in the previous fifteen years. When cut down by this frost both the Cactus and single Dahlias were flowering freely. In only one other of the past fifteen years (1898) have so many of my Dahlia plants remained altogether without injury from frost at so late a period in the autumn as was the case this year. *E. M., Berkhamsted, Nov. 13, 1900.*



FIG. 113.—JASMINUM ANGULARE, AS GROWING AGAINST A WALL IN SOUTH DEVON.

FLORISTS' FLOWERS.

EARLY-FLOWERING CHRYSANTHEMUMS.

WITH such a mild and dry autumn as that of this year, the varieties of early-flowering Japanese Chrysanthemums named below have flowered profusely and long. This type is an exceedingly useful one for the owners of small gardens, who cannot afford to procure, or attend to and house many plants of the ordinary November-flowering varieties. With just the ordinary out-of-doors methods of cultivation, a grand display of flowers may be obtained from plants without any protection whatever during the latter half of September, the whole of October, and the first half of the present month.

Madame la Comtesse Fouchier de Cariel is a gem. The habit of growth is compact and bushy, yet vigorous. For freedom of flower it is unsurpassed

the colour is orange, shaded red, with golden reverse. Rycroft Glory produces rich golden-yellow flowers in clusters, very free-flowering, a very desirable variety; Roi des Precozes is the most brilliant of any in point of colouring—a rich dark crimson flower furnished with stout stems; Mrs. Gifford, a variety growing to a height of 4 feet, yet it has stout stems, that are furnished thickly, and clustered with bright silvery-pink blossoms, the extra height to which the plant grows is of use in furnishing tall vases; Harvest Home, rich bronzy-red, with incurving tips of gold to the petals; Carry Denny is a clear amber-coloured flower, novel and striking; Arthur Crepy, a white flower tinged with yellow, is of stiff, erect growth, and free-flowering; Ivy-stork is of compact growth, exceptionally free-flowering, deep orange, shaded terra-cotta; Madame Eulalie Morel, rosy-salmon, perfectly-formed blossoms; M. Gustave Grunewald is a white flower, shaded with pink, and the plant free-flowering; Market White is a charming pure white variety with shapely flowers; Samuel Barlow has salmon and rose-coloured blooms; Vicomtesse d'Avène, flowers of rose-colour; Mychett Beauty, a rich golden-yellow flower; Queen of the Earlies, pure white; Madame Liger Ligneau is one of the best of yellow early-flowering varieties, the blooms individually reminding the beholder of Phœbus in build.

Madame Desgranges and its sports, G. Wermig and Mrs. Hawkins, are all too well known to require a description. They must not, however, be omitted from a list that is supposed to contain the best of early-flowering varieties. *E. Molyneux.*

Obituary.

ROBERT MORGAN, F.L.S., BOTANICAL AND ZOOLOGICAL ARTIST.—Few even of those who knew Robert Morgan personally were aware of his malady, which ended fatally on November 6. It was appendicitis, and although the operation which ensued was surgically a success, he succumbed to complications which could not be relieved or overcome. Healthy, and ever genial and pleasant, his early death has come as a surprise and a pain to all those with whom he was associated in his work. Fortunately, it may be said, his widow has no children to make this early loss a greater trial. Robert Morgan was only thirty-eight years of age, but he had done much good work that brings little fame and less of the substantial benefits of this life, than many other occupations. In drawing and lithography he contributed to the publications of the Challenger Expedition, to the *Journal of Botany*, Trimen's *Flora of Ceylon*, Fryer's *Potamogetons*, and various other publications. Among his earliest work are figures of Bermudian plants, described by the writer in the *Journal of Botany* in 1883, in connection with the botany of the Challenger Expedition. His other study and amusement was music, which brought him many local friends in Kew and Chiswick. *W. Botting Hemsley.*

WM. STOCKING.—We regret to announce the death of Mr. Wm. Stocking, gardener to Lord Amherst of Hackney, at Didlington Park, Brandon, Norfolk, for nearly sixty years. Mr. Stocking entered the service of the late W. G. D. Tyssen-Tyssen Amherst, Esq., in March, 1841, at Foulden Hall, Norfolk, and removed with him on the acquirement of the Didlington Park estate about 1852. Since the acquirement of this estate many improvements have been carried out under the personal supervision of Lord Amherst of Hackney and his gardener, Mr. Stocking, in whom every confidence was placed. Draining, road-making, planting of trees on a large scale, the building of cottages for the employes on the estate, occupying a series of years. It is not the lot of many men to plant trees of various kinds, cut down and sell as timber, in a lifetime, as was the case with

* Vahl, *Symbolæ Botanice*, pars. 3 (1794), p. 1; Jacquin, *Hort. Schœnbrunn* iv., p. 46, t. 490; Hook. fil., in *Bot. Mag.*, t. 6865.

Mr. Stocking. We need hardly say that deceased was highly respected by all who knew him, and he was widely known through the county.

The funeral took place on Thursday, the 8th inst., in Didlington Churchyard, attended by Lord Amherst of Hackney, the *employés* on the estate, and many others from distant parts of the neighbourhood.

PRESENTATION TO MR. JOHN BAXTER.

On Thursday evening, Nov. 8, Mr. John Baxter, who has been forty-one years gardener on Colonel McCall's Daldowie estate near Glasgow, was presented with a handsome walking-stick, bearing a suitable inscription, and a well-filled purse of sovereigns (and Mrs. Baxter with a handsome umbrella) in recognition of his long and much-appreciated services. John Mair, Esq., Mount Vernon, occupied the chair, and the gathering embraced many old friends. Mr. Baxter is retiring through the considerate kindness of Colonel McCall.

As his career as a gardener covers the most interesting period of Scottish horticulture, a brief sketch of it will be welcome. He was born in Dunblane in 1836, educated in the parish school, and at the age of ten years was awarded a prize for repeating the "Shorter Catechism"! He must have been a "lad o' pairts" to be able to do this. At the age of thirteen he was sent to work in the garden of Sir William Maxwell, of Keir, and remained there for seven years. He recalls to this day with much interest the fact that at the time there were three pensioners employed in the famous gardens who were at Corunna, Waterloo, &c., and who often fired his youthful enthusiasm with many tales of battles. When nineteen years of age Mr. Baxter went thence to Edinburgh Botanical Gardens, and remained two years, being paid 11s. per week. In those days Dr. Neil, Cannonmills Cottage, had a famous collection of alpine plants, and Mr. Baxter was permitted to visit the garden, he also had the opportunity of meeting De Quincy, who had a weird and far-away look. Mr. Baxter's uncle was De Quincy's publisher. When twenty-one years of age Mr. Baxter went as inside foreman in the gardens of the Earl of Kintore, at Keith Hall. When twenty-three years of age he was appointed to Daldowie, and has been gardener there ever since. Roses, Antirrhinums, and Verbenas, which were much better then than now, were in turn taken up by Mr. Baxter and thoroughly well cultivated. Hollyhocks, Dahlias, and other flowers came in for much of his attention from time to time, but the name of Baxter has been inseparably associated with Violas for the last twenty years. As an exhibitor his greatest triumph was perhaps winning the principal prizes at the Glasgow International Exhibition in 1888 against the leading Scotch nurserymen. As a raiser his fame rests securely on such choice varieties as Blue Cloud, Duchess of Fife, Gipsy Queen, White Duchess, York and Lancaster, Princess Ena, and some others.

Mrs. Baxter has been a true helpmeet to her husband during all the long time they have been at Daldowie, and they are followed into their comparative retirement at Uddingston with the good wishes of "troops of friends." *William Cuthbertson.*

HOME CORRESPONDENCE.

THE BRITISH OAK.—The accompanying photograph [not reproduced. Ed.] is one of a number I had taken for a certain purpose about eighteen months ago. It represents an average park Oak-tree. At the time, I did not know what variety it was, the tree being leafless, but two days ago I visited the tree again, to be sure on that point, and from the samples of acorns herewith sent, you will see that it is a well enough marked pedunculata, while the photograph of the tree itself answers (as regards general habit and appearance), almost exactly to the description given of the

sessile Oak in the *Gardeners' Chronicle* of Sept. 22, as follows:—"In the sessile Oak, there are more boughs than in the pedunculate; they are smaller, more horizontal, and much more ramified than in the latter tree. The sessile Oak usually retains a strong leading shoot later in life than the pedunculate one, and this is extremely useful in its competition with Beech. The foliage is more uniformly distributed over the crown of the tree, and protects the soil against the desiccating effects of the sun's rays much better than that of the pedunculate Oak. The leaves of the sessile Oak are on petioles about an inch long (fig. 62), and consequently the supply of water they receive from the wood of the twigs is restricted in quantity, while, owing to the diffuse ramification, the latter obtain less water from the roots of the tree." Further, you will see by the leaves sent, how unreliable, minute, and particular descriptions are in determining varieties, let alone species, for the shoots sent have pedunculate acorns, and the leaves have the petioles of sessiflora—fig. 62 p. 219, showing that all the so-called distinguishing marks get mixed up in endless variations. The tree shown is growing in a naturally rather dry soil, under which the coal has been scooped out a few feet below long ago, yet it is in fine health, though perhaps 200 years old, and is one of the "squat but sturdy Oaks" that Sir Walter Scott drew his descriptions from, in *Ivanhoe*. I suggest, that in a discussion of this kind, descriptions of our native trees be taken from our own forests, and not from French sources. As



JOHN BAXTER.

regards soil and situation, referred to by "B." in a former issue, my experience is that all the forms of our common Oak thrive less, and grow quickest, in a fairly moist soil and sheltered situation, and that none of them "prefer" an exposed situation or dry soil. Under such conditions they become stunted. Almost any ordinary soil seems to contain sufficient food for the Oak, but even in rich soils the broad-leaved forest-trees grow slowly, and soon become stunted if the soil be thin and suffers from drought. The food is there, but the roots cannot get hold of it for want of sufficient water in the soil. *J. Simpson.* [To our eyes the photograph sent represents *Q. pedunculata*, and the leaves and acorns are of that form also. Ed.]

OAKS AT CHATSWORTH.—As one who visited Chatsworth in August last with the English Arboricultural Society, I have been much surprised at the statement made by Prof. Fisher, that the Oaks he writes about are growing on mountain limestone—this he repeatedly asserts. I cannot claim to be a professor, but I could easily discern that the ground gone over by the English Arboricultural Society at Chatsworth was a moorland soil on the millstone grit. With reference to the two Oaks, *Quercus sessiliflora* and *Quercus pedunculata*, I think it would be very poor forestry indeed to plant any kind of Oak on a light dry soil, and certainly no forester with anything like a proper knowledge of his profession would ever think of doing it; and this is apparently the idea held by Mr. Robertson, as in all the young plantations on this class of soil seen at Chatsworth, Beech and Sycamore were the principal hardwoods used, with a result that spoke for itself. I should like to hear Mr. Robertson's opinion on the subject, as I am sure he could definitely inform us if there was any difference in the growing of the two Oaks at Chatsworth, but I understand he has not yet recovered from a severe illness. *Scots Fir.*

SUNFLOWERS AS A FIELD CROP.—Can any farming correspondent kindly inform me whether Sunflowers for seeds have ever been grown successfully, or at a profit, anywhere in the British Islands? We know, of course, that they have been grown on small areas, during hot seasons, with success so far as seed for poultry and pheasant-feeding are concerned, but the question now is, whether Russian or South European Sunflower-seeds cannot be purchased cheaper than we can grow them in our dull and moist climate. As oil-yielding seeds, Sunflowers are extensively grown in Russia, and large quantities of the best seed is eaten by the peasantry, and are sold in the streets of all large towns. Whether or no the Sunflower can be grown successfully as a crop in Britain, it seems likely to be extensively tried in the colonies, where soil and climate are alike suitable, and there is a demand for cheap vegetable-oil. In India it is being tried by the Government of Bengal; and the Consul-General at Odessa says, in a recent report, that its cultivation in Russia is rapidly extending since mills have been erected on the spot to express the oil; and growers are obtaining better prices than they formerly gained by exporting the raw seed. Seeds are sown in April or May, after all danger of frost is over, about 20 lb. of seed per acre being used, and the yield on good land is 1500 to 1600 lb. or more per acre. The yield in oil is 17 per cent. from seed in the husks, to 20 per cent. from husked, or shelled seed. We have experimented with the Giant Russian Sunflower this year, and the plants grew 10 feet high, with enormous flowers, some of the seed-heads being a foot in diameter, and yielding large, plump, and well-flavoured seeds. Apart from the use of the seeds in feeding poultry and game, or even cattle as made into "oil-cake," there seems to be an opening for their use in cooking, either in the shape of seeds or of oil; and as the seeds are pleasant in flavour and very nutritious, they might, like Melon or Gourd-seeds, be utilised along with sugar in sweetmeats or confectionery. *B.*

RUDBECKIA GRANDIFLORA.—I am glad that my note disparaging *R. fulgida*, which you did me the favour to print on p. 329, has already borne good fruit. Mr. Burrell has sent me from Cambridge a flower and leaf of a plant from North America, which he has lately been distributing as *R. fulgida*, but which is undoubtedly *R. grandiflora* (Gmelin), a species as far superior to *R. speciosa* as that plant is to *R. fulgida*. Though gathered on November 2, and called "a shabby specimen" by Mr. Burrell, it is more than 5 inches across, with twenty broad rays fully 2 inches long, resembling *R. speciosa* except in size. It is described in Asa Gray's *Flora of North America*, vol. i., part 2, p. 261; and the only portrait I have seen of it is in Sweet's *British Flower Garden*, series ii., tab. 87. This portrait seems to have been taken in the year 1830 from a plant introduced from North America the year before by Nuttall, and called by him *R. nudicaulis* (Persoon). Sweet calls it *Centrocarpha grandiflora*. How long after 1830 it continued in cultivation in England I do not know, but I think it was extinct in 1860, and has only recently been re-introduced. It is native of Arkansas and Louisiana, and I fear will not remain long in gardens where the soil is cold. It is said to prefer "dry plains." *C. Wolley Dod, Edge Hall, Malpas, November 3.*

LEPTOSYNE GIGANTEA.—It may interest some of your readers to know that the fine Californian Composite so well illustrated in the *Gardeners' Chronicle* for November 3, 1900, p. 319, under the above name, is identical with what is portrayed on plate 6241 of vol. 102 of the *Botanical Magazine* as *Coreopsis* or *Tuckermanna maritima*. What is usually grown under this name is quite a different plant, with much smaller flowers, the correct name of which I have not yet ascertained. *W. E. Gumbleton.*

THE WEATHER IN NORTH CORNWALL.—The total rainfall here during October amounted to 3.76 inches; there were thirteen rainless days, and the greatest fall during twenty-four hours was .63 inches, measured at 9 A.M. on Thursday, October 4. The barometric pressure has been uneven, the lowest reading being 29.32 inches at 1 P.M. on the 4th, and the highest 30.64 inches at 12.45 P.M. on Monday, October 22; this is the highest reading recorded since March 13 last, when it was exceeded by .06 inch. The temperature as registered by a

thermometer 3 feet from the ground and facing due north, has ranged from a minimum of 28° Fabr., on Monday morning, October 22, to a maximum of 65° on the 7th, 9th, and 25th. We registered 3° of frost on the 20th, which played havoc with the tender occupants of the flower garden; an extra degree two nights later unnecessarily emphasised it. As may be expected, the dews have been very heavy. On the whole, the first half of the month was much colder than during a similar period last year. *A. C. Bartlett, Pencarrow Gardens.*

SEEDS OF TREES AND SHRUBS.—I intend to make a centennial plantation which shall contain as far as possible, all the trees and shrubs which have ripened their seeds in Great Britain in 1900, raised by myself, and shall be much obliged if any of your readers could inform me of, or send me, any uncommon species which they may have noticed ripening seed this year. I was unfortunately too late for any of the Poplars, Willows, or Elms, whose seed is rarely collected, and I believe must be sown at once. Having the misfortune to live on a limestone soil, many of the American trees and shrubs are impossible to me. *H. J. Elwes, Coleborne, Andoversford, R.S.O., Gloucestershire.*

LATE PEAS.—The Pea-pods which I send for your inspection will testify the value of Autocrat Pea, as described in a recent issue of the *Gardeners' Chronicle* by your correspondent, J. Mayne. I have gathered several dishes of this variety during the last six weeks, from a sowing made on June 16, and have picked an excellent dish to-day, Nov. 6. I have for the last six years relied on this variety for a late supply. *S. Kerry, Faulkbourne Hall, Witham. [Nice well-filled pods. Ed.]*

GRAPE DIAMOND JUBILEE.—I was pleased to read the letter of Mr. Airdrie concerning this novelty, for, like him, I fail to see how any body of practical men could class it with Black Morocco. How many of the gardeners on the Royal Horticultural Society's Fruit Committee have seen the Black Morocco Grape? I wonder how many have grown it? I saw Diamond Jubilee Grape on the boards at Edinburgh last September, and to look at it was very fine; but whether it will prove the best new Grape sent out during the present century remains to be seen, and I for one will reserve my opinion until I have tested this "Diamond." At any rate, let us hope it may prove to be of better quality than many of the Grapes that have gained a First-class Certificate from the Royal Horticultural Society during the past few years. *W. C. Leach, Albury Park Gardens.*

SPIRÆA AITCHISONI.—In reference to Mr. Hemsley's article on *Spiræa Aitchisoni*, published in the *Gardeners' Chronicle* of October 6, I can say for certain that the seeds of this plant sent by me to Kew in 1895 were not collected in Kashmir, but were brought from the Kurram Valley by one of my plant collectors, who spent the greater portion of the summer of 1894 in that neighbourhood. *J. J. Duthie, Saharanpur.*

CARNATION MRS. J. W. LAWSON.—We note in your report upon this Carnation, which received an Award of Merit from the Royal Horticultural Society on Tuesday, November 6, you call it T. W. Lawson, and say it is not fragrant. As a matter of fact, it is very sweetly scented. *Hugh Low & Co. [We detected no scent. Ed.]*

HIPEASTRUMS AND ORCHIDS AT BROOM HILL.—I recently called at a place known as Broom Hill, situated about two miles from Spratton Station. The gardener is Mr. Dovey, an old Kewite of thirty years or more ago, and when he accompanied me through the Orchid and plant-houses, I observed Hippeastrums which Mr. Dovey called *H. streatifolium*, but which I believe to be *H. reticulatum*, introduced from Brazil in 1577. Mr. Dovey had a batch of about thirty-five to forty plants in 5-inch and 6-inch pots, and some of them had spikes carrying five and six flowers each, the colour being a pleasing pink. The leaves are dark green, with a white or nearly white midrib. Mr. Dovey has succeeded in fertilising some of these flowers with the pollen of *Eucharis grandiflora*, and *Vallota purpurea*. The seed has already germinated, but their foliage is almost the same as the Hippeastrum; perhaps the flowers will show a difference? I saw also a fine collection of Orchids, and some good plants and flowers of *Cypripedium Stonei*, *C. Arthurianum*, and *C. Charlesworthi*. Cattleyas are looking well, and throwing strong growths. Some of the *Odontoglossums* are now showing bloom. *H. K.*

TREES AS SEASON INDICATORS.—Your note last week on "Conifers as Rain-gauges" is probably new as regards rainfall, although in a note that I sent to the *Gardeners' Chronicle* the previous week, I pointed out that whether the soil be rich or poor, it is the degree of moisture in the soil that principally determines the growth of trees; but I wish to say here that I, and probably others, have long believed that trees which show their annual rings clearly are infallible season indicators as far as relates to temperature and moisture combined, broad rings indicating good seasons, and narrow rings bad ones. Herewith I send you a diagram of a vertical section of part of an Oak plank 9 inches wide, that distinctly shows four broad ring periods, with longer periods of very narrow rings between. In the diagram sent—

FIG. 1. PART OF OAK PLANK SECTION SHOWING PERIODS OF BROAD ANNUAL RINGS BETWEEN PERIODS OF NARROW RINGS.

I have marked off, as carefully as I could, one broad ring period of nine years, which is nearly in the centre of the plank, with long periods of narrow rings on both sides, a few of which only are shown. If the broad rings do not indicate a series of favourable seasons, what can they be attributed to? That the annual rings grow narrower when the trees are exposed to cold there is no doubt. Once, in my experience, a part of a wood was thrown into an adjacent park, and was severely thinned at the same time. The thinning checked the growth of some Larches so much that they lost their lower branches, and a good many years after they were cut out altogether. I examined the trees when felled, about four years ago, and found that from the year the groups had been so severely thinned, in order to give them a park-like appearance, the annual rings had grown very much narrower, in fact, they had gone down to about two-thirds of their former breadth. *J. Simpson.*

QUERCUS PEDUNCULATA AND SESSILIFLORA.—The enclosed table showing the rate of growth of these two varieties of Oak may be of interest to your readers. The acorn of *Q. pedunculata* was taken from the large Oak at Panshanger, and sown by my father in 1811, and that of *Q. sessiliflora* from a tree in Woburn, and sown by myself in 1840. The two trees are growing here in a sandy loam 200 yards apart; an accurate account of their growth has been kept, which I enclose:—

Year.	Quercus pedunculata. Sown 1811.		Quercus sessiliflora. Sown 1840.	
	Circumference at 3 ft.	Circumference at 5 ft.	Circumference at 3 ft.	Circumference at 5 ft.
	ft. in.	ft. in.	ft. in.	ft. in.
1865	7 0	6 7	1 10	1 8
1839	7 3	6 10	2 6	2 4
1871	7 6	7 0½	2 10	2 7½
1872	7 8	7 2	3 0½	2 10
1878	8 3	7 9	4 2	3 11
1883	8 7	8 1	5 0½	4 8½
1885	8 9	8 2	5 3½	5 0
1893	8 11	8 6	5 8	5 4
1900	9 7	9 1	8 0	7 7

It appears that the sessile variety is rapidly gaining on the pedunculate variety. *W. Clinton Baker, Bayfordbury, Herts.*

PLANT PORTRAITS.

- ALTROVANDA VESICULOSA.*—*Japanese Icones*, t. xxxviii.
CHEROMETTES JAPONICA MAULEI.—*Revue de l'Horticulture Belge*, November. See original description of "*Pyrus Maulei*" in *Gardeners' Chronicle*.
CELOGYNE PANDURATA.—*Garten Flora*, t. 1480, Oct. 1900.
DAVALLIA TENUIFOLIA.—*Japanese Icones*, t. xxxvi.
DAVALLIA TENUIFOLIA VAR. CHINENSIS.—*Japanese Icones*, t. xxxvii.
HOYA IMPERIALIS. Lindley. —*Revue Horticole*, October 16.
NELUMBUM LUTEUM.—*Mechanics' Monthly*, August.
PAPHIOPEDILUM (CYPRIPEDIUM) CHAMBERLAINIANUM.—*Revue de l'Horticulture Belge*, November.
PEAR LÉON RECO. *Bulletin d'Arboriculture*, &c.—A Pear of moderate size, turbinate, citron-yellow, with dense russeting; flavour "good" or "very good." Season October-November.
SACCOLABIUM JAPONICUM.—*Japanese Icones*, t. xl.
STIGMATODACTYLUS SIKONIANUS.—*Japanese Icones*, t. xxxix.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 8.—DR. M. T. Masters, in the Chair; Rev. W. Wilks, Rev. G. Henslow (Hon. Sec.); visitor, Mr. W. Bancroft, Director of the Botanic Institute, Jamaica.

Oaks in woods at Sherley.—MR. WILKS exhibited various specimens of Oak leaves. The prevailing English Oak is *Quercus robur* var. *pedunculata*, the leaves of which run into a great variety of forms, according to the amount of development or arrest of the interstitial tissue between the ribs. A second kind closely resembles the leaf of the Turkey Oak *Q. cerris*, or the moss-cupped Oak. Others appear to be hybrids between *Q. cerris* and *Q. rubra* and also *Q. r. pedunculata*. Two trees were observed having leaves characteristic of the American *Q. coccinea*. This tree apparently never bears acorns in this country.

Castanea creta foliata.—DR. MASTERS showed (from Mr. Burbidge) some remarkable leaves consisting of but little more than the midribs, which had issued from the stump of a tree which had been cut down. He observed that the narrow leaved variety grown in parks probably originated in this way.

Proliferous Apple shoot.—DR. MASTERS also exhibited a specimen of this well known phenomenon, in which the leafy shoot appeared to penetrate an Apple and then proceed to a length of upwards of a foot. It is due to the floral bud being replaced by a leaf bud within the "pseudo-fruit," the Apple being really of the nature of a stem in which the pistil is embedded.

Leaf-cutter Bees' nest.—Specimens of these cells made of portions of leaves were sent by Mr. THOS. CROSSWELL, gardener, Homewood, Eden Park, Beckenham. He describes the formation of these leaf-cells as follows:—"After our Freesias had finished flowering and died down, the sticks that had been used for their support around the sides of the pots were removed, to facilitate their being placed on a shelf in the full sun. The bees took possession of the holes left by the removal of the sticks, and on turning out the pots of beehives in August, many of these cells were found."

CAMBRIDGE HORTICULTURAL.

NOVEMBER 7, 8.—Many readers of the *Gardeners' Chronicle* who are interested in the welfare of the Cambridgeshire Horticultural Society, would observe with satisfaction on the great advance displayed in the autumn show of this year. The Corn Exchange at Cambridge is a spacious building, but it scarcely afforded sufficient room for the tabling required to hold the very numerous exhibits. Chrysanthemums were good, especially the cut blooms, but it was not in these classes that the progress was so marked. Hitherto, fruits have been but indifferently represented, though the district is a centre for market growers, but the efforts made this year to extend the interest in Apples and Pears more particularly, resulted in the best autumn show seen at Cambridge for many years.

Amongst cut blooms of Chrysanthemums, Japanese varieties were admirably shown; and in several of the largest classes, as those for thirty-six and twenty-four blooms, distinct varieties, Mr. Alderman W. BOND, J.P., Brookside, Cambridge (gr. Mr. Elward), won the leading prize; with superb examples of the most popular varieties. Messrs. HOBDAV & SONS, Cavendish Nurseries, were also notable exhibitors in several classes; and prizes were secured by E. B. FOSTER, Esq., J.P., Trumpington; J. J. BRISCOE, Esq., J.P., D.L., Bourn Hall; W. DOBBS, Newnham, with others. Incurved blooms were not so abundant, but of good quality, Messrs. LINTON, HOBDAV, BRISCOE, PALMER, and DOBBS, taking the chief awards.

MR. ARTHUR MATTHEW, Trinity Street, who is an ardent amateur horticulturist, was adjudged 1st honours for a group of plants arranged for effect, a very bright and well finished contribution; Messrs. HOBDAV & SONS, were close 2nd, with well-grown plants, bearing blooms of exhibition size and quality. An especially handsome non-competing group was contributed by P. L. HUDSON, Esq., Pampisford (gr. Mr. J. Kirkpatrick), consisting of Orchids and fine foliage plants in capital condition, and tastefully arranged near the entrance of the hall.

Apples and Pears were the great features in the fruit classes, and as the former were highly coloured and arranged on white paper, covered tables with green baize at the back and front, the effect was excellent. The quality was excellent throughout, especially in the dessert variety classes, and the competition was remarkably keen. Mr. J. H. RIDGEWELL, Histon Road, was very successful in all the smaller classes; Messrs. HURNARD, BRISCOE, MORTIMER, WARREN, and HUTCHINSON, being prominent exhibitors.

The large class for twenty dishes of Apples and ten dishes of Pears was, however, the *pièce de résistance*, Mr. WOODWARD, Barham Court Gardens, Maidstone, taking 1st honours for a magnificent collection which was greatly admired; Mr. RIDGEWELL followed for 2nd place in this class with finely-coloured Apples.

Vegetables were well shown, Potatoes being of notable quality as regards evenness and size. The committee, with all the officials, have good reason to be satisfied with the result of their efforts; and the secretary, Mr. Arthur Matthews, with his assistant, Mr. Fordham, worked hard to render the show an unquestioned success.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 12.—A meeting of the Floral Committee was held on Tuesday last in the Royal Aquarium, Westminster. The following novelties, which were selected from a considerable number before the Committee, were given awards:—

C. Miss Nellie Southam.—An incurved variety, obtained from a cross between the varieties Violet Tomlin and C. H. Curtis. The flowers shown were of good size, and excellent form. In colour they were grey or silvery, the upper and hidden surfaces of the florets being pale red. From Mr. A. W. TANNER, Branksome Park, Bournemouth (First-class Certificate).

C. Mrs. R. Darby.—A Japanese flower of large size and great depth; colour a little less deep than Pride of Madford. The tips of the florets incurve slightly, and the flower has much refinement. From Mr. C. GRIFFIN, Waltham Leigh, Addlestone, Surrey (First-class Certificate).

C. Henry Stowe.—An excellent Japanese flower, florets incurving slightly, colour pearl-like white, tinted with pale lilac. From Mr. H. STOWE, Uffculme Gardens, Mosely, Birmingham (First-class Certificate).

C. Mr. J. Parker.—A cream-white Japanese flower with drooping florets, which slightly incurve at the tips. From Mr. C. PENFOLD, Leigh Park Gardens, Havant (First-class Certificate).

There were several single varieties of considerable decorative value shown by Mr. H. REDDEN, Manor House Gardens, West Wickham.

Another single variety, named Nunhead White, and shown by Mr. WITTY, Nunhead Cemetery, London, was white, and the florets incurved slightly towards the disc, in much the same manner as in the so-called Cactus single Dahlias, but the margins are not rolled as in the case of the Dahlias. Among exhibition varieties that the Committee wished to see again were Miss Florence Southam, a fine incurved flower, bronze tinted with rose, from Mr. A. W. TANNER; Major Plumbe, a rich yellow coloured Japanese incurved, from Mr. R. OWEN, Maidenhead; Miss Roberts, a large flat yellow Japanese, which greatly lacked depth, also from Mr. OWEN; Arthur King, a white incurved flower, occasionally showing a blush, suggestive of Ma Perfection, but rather thin, from Mr. OWEN; and Mrs. C. Griffin, a rather loosely built Japanese flower, yellow, but slightly tinted with red on the centre florets, from Mr. GRIFFIN, Addlestone.

MONMOUTH CHRYSANTHEMUM AND HORTICULTURAL.

NOVEMBER 8, 9.—The annual show of the above Society was held in the Rolls Hall, Monmouth, on the above dates. The classes generally were well filled, and the exhibits of much merit. The groups of Chrysanthemums, although not quite so numerous as usual, were nevertheless of good quality; as were also the cut blooms. Apples and Pears were numerous and good; vegetables better shown than I ever remember. The collections staged by Mr. LEITH, gr. to Col. MIDDLETON, of Ross, were of remarkable merit. The only really good Grapes came from Pontypool Park gardens. A concert was held each evening in the Hall, which proved to be a great attraction.

Groups (open), 60 square feet.—J. M. BANNERMAN, Esq., Wyaston Leys (gr., Mr. Geary), was 1st, with a well arranged collection of fairly dwarf plants, possessing large, high coloured blooms. 2nd, The Rev. Canon HARDING, Pentwyn, Mon. (gr., Mr. Sindrey). Mr. WARD, a Monmouth amateur, who was disqualified in this class, was deservedly awarded a special prize.

Ornamental foliage and flowering plants, in a space 10 feet by 6 feet.—Here, amongst four exhibitors, Mr. GEARY was again 1st, with a pretty, lightly arranged lot of plants. Palms, Dracenas, Orchids, Bouvardias, &c., edged with Maidenhair Fern. Admiral PEARSON, who followed, made use of ornamental foliage plants only, which were arranged so as to exhibit each plant's individual character.

Cut blooms (open).—Twenty-four Japanese, distinct.—Mr. LOCKYER, gr. to Mr. HANBURY, Pontypool Park, took a decided lead, with large full blooms of Mons. Louis Stemy, Madame G. Henri, Madame Carnot, G. J. Warren, Nellie Pockett, &c. 2nd, Mr. A. W. G. WRIGHT.

Twelve Japanese.—There was close competition in this class, Mr. PALMER, of Ross, taking the lead with Mrs. Mease, Edwin Molyneux, Phoebe, &c.; Sir H. M. JACKSON, Llantillus Court, being 2nd.

Twelve Incurveds.—With medium-sized blooms Mr. GEARY was again 1st, amongst his best being Ma Perfection, very fine; Mrs. W. Shipman, Perle Dauphinoise, and Duchess of Fyfe; Mr. A. W. FOSTER was 2nd, with larger blooms.

Other classes, including one for Anemones, were generally well filled.

A splendid collection of Violets were exhibited in glasses by Messrs. HOUSE & SON, Bristol, which attracted much notice. Some of the best were La France, Victoria, and Luxonne, single; and Comte de Brazza, Mrs. J. J. Astor, and Lady H. Campbell, double flowered varieties. Thos. Coomber.

BRIXTON CHRYSANTHEMUM.

NOVEMBER 7, 8.—This old established Society, which now includes the adjoining districts of Clapham and Streatham, fully maintains its uniform excellence. The recent show was, by many who are well able to judge, considered to be the best it has as yet held.

Plants, Groups.—Four of these were staged in the class provided, the 1st prize being awarded to Mr. T. BARSON, gr.

to E. M. NELSON, Esq., Lingham House, Clapham Park; the best points were the general excellence of the blooms, and the absence of overcrowding, whilst the healthy foliage added to the effect. 2nd, Mr. MURSELL, gr. to the late Mrs. BURTON, Tower House, Leigham Court Road; quality was lacking here in the dwarf plants—the back, however, was fine, and the choice of colours excellent.

Specimens of Japanese, six varieties.—1st, Mr. GIDNER, gr. to Major SAUNDERS, Thornton Lodge, Clapham Park, who showed an admirable set of plants, the best were Source d'Or, Miss Watson, and Emily Silsbury; 2nd, Mr. RICHARDS, gr. to W. SHEPPERD, Esq., Alde House, Clapham Park, two of his best being Modesto, and Gloire des Roches.

For untrained plants not more than 3 feet high, and in pots not exceeding 7 inches in diameter.—The 1st prize was easily won by Mr. HURST, gr. to F. FITTER, Esq., whose plants were admirable examples of what decorative Chrysanthemums should be; the best were Gustave Henri, R. H. Pearson, Chas. Davis, and Vicar of Exmouth. 2nd, Mr. VINCE, gr. to J. MARGETSON, Esq., Bramleigh, Leigham Court Road.

Cut blooms, Japanese.—These throughout were very fine. Mr. W. HOWE, gr. to Lady TATE, Park Hill, Streatham, was 1st, for twenty-four varieties, very fresh and bright looking, the best being J. R. Upton, Mr. T. Carrington, Vicar of Leatherhead, Oceana, Mrs. H. Weeks, Lady Ridgway, Phoebe, and Matthew Hodgson. 2nd, Mr. MURSELL, who ran close with fine blooms of Emily Towers, Lady Byron, Mrs. Mease, Mrs. Weeks, Duke of Wellington, and Mrs. Coombes.

For twelve varieties.—Mr. W. PARKER, gr. to E. C. BLISS, Esq., Tulse Hill, was 1st in a strong class, his best being Edith Tabor, Mutual Friend, and W. Seward; 2nd, Mr. MILSOM, gr. to J. STODDART, Esq., Tulse Hill, the best here were Mrs. Mease and Mrs. Barkley.

For twelve incurved (Japanese).—Mr. BARSON won in creditable fashion with typical forms, his best being N. C. S. Jubilee, John Pockett, and Mary Molyneux; 2nd, Mr. HOWE, who had good blooms of Oceana, Australia, and Mons. Desblanc.

Incurved blooms.—Mr. HOWE was 1st, both for twenty-four and twelve varieties, winning in an easy fashion in the larger class. His finest blooms were those of C. H. Curtis, Duchess of Fife, The Egyptian, Mrs. Howe, and Madame Ferlat. Mr. HILL, gr. to G. W. RYDER, Esq., followed in the class for twenty-four; and Mr. BARTON in that for twelve varieties.

Anemone-flowered.—In the class provided for these, Mr. FULBROOK, gr. to B. B. BAKER, Esq., was 1st, with a very equal stand of good blooms, the best being Descartes, Ruche Toulousaine, Enterprise, and Madame Ch. Lebosqz. The following, viz., Messrs. VINCE and T. PEARCE were placed equal 2nd, each showing fine borders.

Pompons, twelve varieties.—Mr. MILSOM was 1st with fine blooms on single stems, the best being W. Sabey, Adonis, and Comte de Morny.

A basket of Chrysanthemums.—Mrs. STRUGNELL, Brixton Hill, won with a well finished and tasteful arrangement of yellow and white, carefully blended with autumnal foliage. Miss M. CROOK, who was 2nd, depended with less effect upon Source d'Or only.

Orchids, and other plants in season, Ferns and fine foliage plants, fruits and vegetables, greatly aided in making up this exhibition. The arrangements as usual were under the practical guidance of Mr. W. Roupell, the Hon. Sec. II.

DEVON AND EXETER HORTICULTURAL.

NOVEMBER 8, 9.—A two days' exhibition of fruit and Chrysanthemums was held in the Victoria Hall on the above dates, and while being an exceptionally fine show of fruit for the season, it was perhaps the best Chrysanthemum show the Society has held, especially good being the cut blooms.

For the Silver Cup and Championship for the best thirty-six Japanese, there were ten entries, and several ran each very close for 2nd and 3rd prizes. The best growers in the West of England were pitted against each other, they having met previously at several of the local shows. The winner of the 1st prize, &c., was Mr. A. McDONALD, gr. to HORACE ST MAUR, Esq., Stover Park, a new man at the Exeter November exhibition, and he won handsomely with thirty-six as fine blooms as have ever been shown in Exeter.

Mr. R. MAIRS, gr. to Sir JOHN SHELLEY, Bart., Shobrooke Park, carried off the premier honours in Apples and Pears with a superb collection, large, even, and well coloured examples of their respective varieties.

CHRYSANTHEMUMS IN POTS.

No fewer than eighteen plants, distinct, were arranged in semi-circular form, measuring 14 feet by 8 feet, rising to not more than 6 feet at the back centre, quality of bloom to be the first consideration, and effect the next. The contest ended in what was almost a tie, for while one scored in effective grouping, the other had rather fresher blooms, while both included some very fine blooms and well grown plants. The 1st prize was awarded to Mr. W. ROWLAND, gr. to Mr. W. BROOK, Parkeswell; 2nd, Mr. W. R. BAKER, gr. to Lady DUCKWORTH, Knightleys; 3rd, Mr. J. ROGERS, gr. to Mrs. SAVILE, Barley House.

For the smaller groups of 10 feet by 6 feet, Mr. F. R. HEARN (gr., Mr. G. Anning), was 1st; and Mr. MARK FARRANT, 2nd.

For a group 9 feet by 5 feet in 6½-inch pots, Mr. C. M. COLLINGWOOD, Master of the Institution for the Blind, was 1st; Mr. W. BROOK, 2nd.

MISCELLANEOUS GROUPS OF PLANTS.

Here were but two entries, and Mr. W. BROOK was an easy winner; Lady DUCKWORTH's group being too dwarf and too sombre in effect.

PLANTS IN POTS.

Primulas were better shown than usual, 1st prize going to Rev. E. E. HEATHCOTE, Rewe. Cyclamens were also well shown, premier honours falling to T. KEKEWICH, Esq., Peamore (gr., Mr. Abrams).

Plants for the dinner-table were a nice lot, bright, graceful, and in the best of condition. Sir ALEX. HOOD, Bart., M.P., St. Audries, was 1st; Mr. W. B. HEBERDE, C.B., Exeter, 2nd; and Lady DUCKWORTH, 3rd. For the smaller plant class, pots restricted to 3 inches inside measurement, Lady DUCKWORTH, was 1st; Sir A. HOOD, 2nd.

For Bouvardias there was but one entry, Mr. W. BROOK, who was awarded 1st. Poinsettias were very well shown, 1st, MARK FARRANT, Esq.; 2nd, T. KEKEWICH, Esq.

Violets were better than usual, W. C. Cleave, Esq., Crediton, 1st; Sir JOHN SHELLEY 2nd.

For Solanums Mr. KEKEWICH was 1st, and for Tree Carnations Rev. E. E. HEATHCOTE.

CUT BLOOMS.

Thirty-six Japanese, not fewer than twenty-four distinct varieties, Mr. H. ST. MAUR, Stover Park (gr., Mr. A. McDONALD), was an easy 1st with a grand lot of blooms at their best, and most of them well finished—all well staged. Among them were Mrs. W. Mease, N. C. S. Jubilee, J. Lewis, Phoebe, Lady Hanham, Mr. A. G. Miller, M. Calvat, Le Grand Dragon, Edith Tabor, Mrs. H. Weeks, M. Pankoucke, W. Towers, Pride of Exmouth, Madame Carnot, and Mme. P. Rivoire. This lot gained the Silver Cup and N. C. S. Certificate. Mrs. T. J. DENNIS, Barnstaple (gr., E. J. Mearles), was 2nd; Rev. G. LYON, Plymouth (gr., Mr. G. Styles), 3rd. A 4th and an extra prize was awarded, so strong was the competition.

For the eighteen Japanese, not fewer than twelve varieties, Sir J. SHELLEY was 1st, among his best being Mrs. J. Lewis, Mutual Friend, Australia, Lady Hanham, Edith Tabor, and Mrs. W. Popham. Sir A. HOOD was 2nd.

For twelve Japanese, Mr. H. ST. MAUR was 1st.

For six white (one variety), Mr. T. KEKEWICH was 1st, with good blooms of Madame Carnot.

For six yellow, Mr. H. HAMMOND SPENCER (gr., Mr. Foster), was 1st, with fine blooms of Le Grand Dragon; and for six any other variety, Rev. G. LYON, with fine specimens of Mrs. T. Carrington.

For the twelve incurved, Sir J. SHELLEY was 1st, Mr. H. HAMMOND SPENCER 2nd; while for the six, the latter gentleman was 1st, and Rev. G. LYON 2nd. Among the best of the incurveds staged were C. H. Brynante, Lady Isabel, Madame E. Roger, and Duchess of Fife.

For twelve trusses of zonale Pelargoniums the prize went to Rev. E. E. HEATHCOTE, his being the only entry.

FRUIT.

Grapes.—Three bunches of Black Alicante were well shown by Rev. H. CLERK, Exmouth, 1st; Mr. G. MATTHEWS, Exmouth, being 2nd. Mr. CLERK was also 1st for Muscat of Alexandria, and for the "any other" class with Muscat Hamburg.

APPLES.

Collection of thirty varieties, distinct, fifteen dessert and fifteen culinary: 1st, Sir J. SHELLEY, Bart.; 2nd, Sir J. FERGUSON DAVIE, Bart., Creedy Park (gr., Mr. Seward). The winning fruits were exceptional, and the collection included Wealthy, American Mother, Adams' Pearmain, Ribston, Sturmer, King, and Allington Pippins, Cornish Aromatic, Melon Apple, Cornish Gillyflower, King of Tomkin's County Royal Jubilee, Baumann's Red Winter Reinette, Newton Wonder, Reinette du Canada, Mère de Ménége, Emperor Alexander, Gloria Mundi, Bramley's Seedling, Golden Noble, Lord Derby, Saltmarsh's Queen, Hollandbury, Blenheim Orange, and Striped Beefing.

For twelve dishes, six dessert and six cooking: F. R. HEARN, Esq., Exeter (gr., Mr. G. Anning), was 1st, with a good lot, which included Tibbett's Pearmain, Annie Elizabeth, Peasgood's Nonsuch, Warren's King, Hollandbury, Bramley's Seedling, Cox's Orange Pippin, Adam's Pearmain, Ribston, Cornish Gillyflower, American Mother, and Boston Russet.

First prize for six dessert went to Mr. T. KEKEWICH, and for six culinary to Sir J. FERGUSON DAVIE.

So good were the collections shown by Mr. MAIRS and Mr. SEWARD in the thirty varieties class that the single dishes were hardly superior to them, although Lady DUCKWORTH's Golden Noble, Lord POLTIMORE's Cox's Orange Pippin, and Mr. J. TATE's Newton Wonder, were remarkably fine.

In the "any other" dessert class, Mr. KEKEWICH took premier honours with King of Tomkin's County; and in the culinary, Lord POLTIMORE was 1st with Brabant Bellefleur, very fine. The prize for flavour went, as usual, to Cox's Orange Pippin, shown by Sir J. SHELLEY, who was, throughout, particularly strong in Apples.

The prize for the finest specimen in the show was awarded to Rev. E. E. HEATHCOTE for Peasgood's Nonsuch.

PEARS.

Collection of Nine Varieties—Six Dessert, and Three Culinary.—The place of honour was awarded to Sir J. SHELLEY, with Lord POLTIMORE a close 2nd. In the winning lot were Marie Louise, Beurré Bachelier, Beurré Clairgean, Pitmaston Duchesse, Conseiller de la Cour, Doyenné du Comice, Black Pear of Worcester, Uvedale's St. Germain, and Bellissime d'Hiver.

The 1st prize for six varieties, Dessert, went to Mr. T. KEKEWICH, which included Beurré Bosc, Princess, Glout Moreau, Pitmaston Duchess, Marie Louise, and Doyenné du Comice.

Non-competitive exhibits came from R. VEITCH & SON,

Exeter; C. SOLATER, Heavitree; W. J. GODFREY, Exmouth; JARMAN & Co., Chard; ISAAC HOUSE & SON, Westbury-on-Trym; and R. B. ASHBY, Esq., Matford House, who had a fine stand of Cattleyas, Dendrobiums, Oncidiums, and Cypripediums, staged by his gardener, Mr. Meritt. Dr. WARRE of Dulverton showed a splendid dish of Goldfinger Peas, and Mr. T. WHITE, Alphington, a yellow Mammoth Gourd weighing 106 lb.

NORTHAMPTON CHRYSANTHEMUM.

NOVEMBER 7, 8.—This Society held its twenty-ninth exhibition in the Corn Exchange. The entries were as numerous as they have been at preceding shows, but the quality of the cut blooms was scarcely as good as usual. The Japanese blooms were not so large; and incurved blooms were less neat than formerly. The Amateurs, however, exhibited much better than usual, and their exhibits were worth the notice of professional exhibitors.

PLANTS AND GROUPS.

There were two entries in the class for a group of Chrysanthemum plants in pots, upon a space of 8 feet by 7 feet 6 inches. The 1st prize was won by F. G. ADNITT, Esq., J.P., Northampton (gr. Mr. Owen Soden), who staged a very pretty group. Sir HERWARD WAKE, Courtenhall, Northampton (gr. Mr. J. Knightley), was 2nd, and his plants bore blooms which in some cases were large, but lacked finish.

Mr. SODEN was 1st for six Japanese trained specimens; and for four plants of Japanese varieties; also for four specimen plants of incurved varieties, and for single specimen plants.

Primulas were rather poor, and the competitors staged very similar strains. Mr. Holland, gr. to F. BOSTOCK, Esq., Springfield, Northampton, was 1st for six table plants, with specimens of *Eulalia japonica variegata*, *Pandanus Veitchii*, *Aralia Veitchii*, and *Codiaeums*.

CUT BLOOMS.

For three vases of specimen blooms of Japanese varieties distinct, three blooms of each variety; J. COOPER, Esq., Delapre Abbey, Northampton (gr. Mr. W. Woods), was 1st. Miss SMITH DORRIS, Hartwell Villa, Aylesbury (gr. Mr. W. Lepler), was 2nd.

In the incurved section for eighteen varieties, and for twelve varieties, Earl SPENCER, Althorp Park, Northampton (gr. Mr. Silas Cole), was 1st; and Mr. WOODS 2nd.

For Japanese flowers in eighteen varieties, Mr. COLE won 1st prize, and also in a class for twelve varieties introduced since 1896. In the latter class were blooms of Mrs. Barkley, Marie Calvat, Surpassé Admiral, Hero of Omdurman, R. Hooper Pearson (best yellow bloom in the show), Mrs. J. Bryant, J. R. Upton, Mr. W. Cursham, Mr. Louis Remy, Mrs. H. Weeks, and Florence Molyneux. Mr. DUNKLEY was 2nd, having a good bloom of Mr. W. Mease in his collection.

For a table of specimen blooms, Mr. Woods was 1st.

FRUIT AND VEGETABLES.

For two bunches of white Grapes there were four competitors; and H. A. ATTENBOROUGH, Esq., Catesby, Daventry (gr. Mr. A. Childs), won 1st prize with two bunches of Muscat of Alexandria. Mr. Hayes, gr. to the Marquis of Northampton, was 2nd with Raisin de Calabre.

For two bunches of black Grapes there were eight entries, and Mr. HOLLAND won 1st prize.

Mr. COLE had the best six dishes of cooking Apples; and Mr. HAYES the best six dishes of dessert Apples.

For eight varieties of vegetables, and also for six varieties, Mr. COLE was 1st. H. K.

WINDSOR, ETON, AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 9.—This Society held its show as usual in the Albert Institute, one of the best it has as yet held in the Royal Borough.

Groups of Chrysanthemums interspersed with foliage plants were attractive, and no fewer than seven entries were made, and each was distinctly creditable. Mr. W. Cole, gr. to Mrs. FOSTER, Clewer Manor, took the 1st prize, and a Silver Challenge Cup that accompanies it. The plants were of the right sort, dwarf and well flowered, and no mistake was made in arranging them thickly, for every bloom could be seen from the sides. Mr. W. Skeet, gr. to Sir D. GOOCH, Clewer Park, was 2nd; Mr. Lane, gr. to Miss DURNING SMITH, King's Ride, Ascot, was 3rd.

Mr. Murlby, gr. to R. BUCKWORTH, Esq., was 1st for a tastefully arranged group of miscellaneous plants, in which well flowered Orchids were prominent features.

Cut blooms were well represented. Mr. Sturt, gr. to N. L. COHEN, Esq., was 1st for twenty-four incurved distinct, with fine examples, the more noteworthy being C. H. Curtis, Hanwell Glory, Ma Perfection, Miss V. Foster, Duchess of Fife, Mrs. D. C. Kingston, and Ernest Cannell. Mr. G. LANE was a creditable 2nd. There were five entries.

Twelve incurved and twelve Japanese varieties found Mr. LANE 1st, with fairly good examples in both sections.

Mr. FOSKETT had the best twelve Japanese varieties, with fresh bright blooms.

Six blooms, Japanese, of one variety brought a lively competition; and Mr. STURT staged really fine specimens of Mrs. W. Mease, and easily secured the 1st place; Nellie Pockett was the variety depended upon by Mr. LANE, who was 2nd.

Mr. STURT was also 1st for six blooms of any one incurved variety, with typical examples of Ma Perfection; and Mr. HAWTHORN was 1st for large blooms of Lady Isabel, a thick-petaled, deep lilac-coloured variety.

Anemone-flowered varieties were better represented than usual; for twelve, Mr. COLE was 1st. Eighteen Japanese blooms arranged in six vases gave Mr. STURT an opportunity of adding to his many winnings with typical blooms of Mr. T. Carrington, Fair Maid, Madame Carnot, and Phœbus; Mr. LANE, was 2nd.

To give an opportunity of illustrating the large Japanese blooms for decoration in conjunction with foliage plants, prizes were offered for eighteen specimens, and a keen contest resulted, Mr. STURT winning the 1st prize with large, brightly-coloured examples, neatly arranged on a base of Ferns, backed up with *Codiaeums*, forming an interesting display; Mr. COLE was 2nd. The premier blooms were found in C. H. Curtis, shown in an open class; and Mrs. Weeks in an amateur's class.

The Windsor amateurs staged remarkably well; Mr. YOUNG was 1st for a group of Chrysanthemums, twelve and six blooms, as well as for eighteen of any section to be arranged in six vases.

Mr. FIRT, florist, Windsor, had an interesting and choice exhibit of the florist's art.

LINNEAN SOCIETY OF LONDON.

NOVEMBER 1.—Professor S. H. VINES, M.A., F.R.S., President, in the chair.

Mr. J. E. Harting exhibited and made remarks upon the following birds which had been recently forwarded to him for examination:—

- (1) A hybrid between Blackcock and Red Grouse, shot at Brechin, N.B., September 14.
- (2) A Glossy Ibis, killed at Saltash, Devon, October 4.
- (3) A Little Owl, obtained at Dunmow, Essex, October 22.

Mr. F. D. Godman concurred in identifying the game-bird as a hybrid between the species named, and considered such hybrids of rare occurrence; while examples of a cross between blackcock and pheasant were not nearly not so uncommon.

Mr. Howard Saunders considered the Little Owl (*Carine noctua*) as having little if any claim to be considered a British bird; its occasional appearance in England being due to the fact that a good many had been turned out from time to time in different counties.

Mr. George Massee exhibited a series of coloured drawings and an extensive collection of the larger fungi which had been brought for exhibition by himself, by Messrs. E. M. Holmes, M. C. Cooke, A. O. Walker, E. H. Smedley, A. W. Kappel, and by Miss A. L. Smith.

Mr. Charles Chilton, M.A., F.R.S., read a paper on the "Terrestrial Isopods of New Zealand," on which some critical remarks were offered by Mr. Stebbing.

Mr. J. E. S. Moore, F.Z.S., on the "Character and Origin of the Park-lands in Central Africa," which was illustrated by a series of lantern-slides. These park-lands in the Tanganyika district have quite the appearance of having been formed by the hand of man, but are really natural growths, due to the fact that light surface-soil has been laid down over what appear to have been lake deposits. Any given line of country will show large plantations, with quite a home-like look, separated by grass-lands; and, as Tanganyika is approached, they dwindle in size till they consist of a few shrubs, overshadowed by giant Euphorbias, Cactus-like in appearance. Then come stretches of grass, dotted with Euphorbias; and, last of all, the salt steppes by the lake, which is now held to have had at one time an outlet to the sea. Mr. Moore's explanation is, that at first only the Euphorbias would grow on the salt steppes; but as these sprang up, they afforded a shade and shelter to self-sown shrubs, each of which, as it established a footing, contributed to the natural planting of the area by the distribution of its seeds, till this process reached its highest development in the large plantations where the shrubs overtopped the Euphorbias to which they owed their growth.

Exhibitions.—Mr. W. B. HEMSLEY, F.R.S., F.L.S.: A new species of *Fitchia* from Raratonga.

BIRMINGHAM CHRYSANTHEMUM.

NOVEMBER 6, 7, 8.—The annual exhibition was held in the Bingley Hall, as usual, which was taxed to its utmost capacity, large as it is. Altogether, a magnificent display was made, such as has never been excelled in any town, which is saying a great deal. The groups of Chrysanthemum plants were fine in the extreme. Specimen plants were good, and the cut blooms very numerous, and of excellent quality. Fruit was largely shown, as likewise vegetables. No fault could be found with the arrangements, and everything was in its place by the appointed time.

Cut Blooms.—Every class was provided with substantial money prizes in the incurved and Japanese sections, and these were separated—a very proper arrangement. For twenty-four Japanese varieties, distinct, the 1st place carried a £10 prize, and there were no fewer than twelve competitors, making a huge display. Mr. A. Chandler, gr. to A. JAMES, Esq., Cotton House, Rugby, was an easy 1st, having superb examples of Mrs. J. Lewis, Edith Tabor, Miss Alice Byron, Australia, Mrs. Coombes, Florence Molyneux, Mrs. J. W. Barks, Lady Hanham, Mrs. Weeks, Sir H. Kitchener, Phœbus, and M. Chenon de Leché. Mr. Crooks, gr. to the Dowager Lady HINDSLIP, Hedsor Hall, Droitwich, was 2nd, having blooms of good quality, but smaller in size. Mr. S. BREWELL, gr. to H. F. HAYTHURST, Esq., Wellington, was a close 3rd.

Mr. CHANDLER was winner of the 1st prize in the class for eighteen Japanese, with a collection similar to that which he

staged in the larger class. Mr. P. JONES, gr. to C. A. SMITH RYLAND, Esq., Warwick, was a good 2nd in this class.

Twelve Japanese incurved blooms, brought five exhibitors forward, and the best, a fairly representative lot of blooms, came from Mr. CHANDLER; these were Miss E. Addison, Anstrabe, Miss A. Byron, President Bevan, and Mrs. W. Cursham. 2nd, Mr. Jones, with smaller blooms.

Smaller Classes.—Six Japanese, any one white variety. Madame Carnot won for Mr. Crooks the premier award, followed by Madame Philippe Rivoire for 2nd place. Phœbus was the finest yellow-flowered Japanese variety, and secured for Mr. CHANDLER the leading position in that class.

Special prizes were offered for six blooms, any one variety, in one vase, which brought much competition. Mr. G. Fandrey, gr. to W. SMITH, Esq., Moseley, was an easy winner, with substantial blooms of Lady Ridgeway. Mr. O. Brasier, gr. to E. MARTINEAU, Esq., Edgbaston, was 2nd, with the same variety.

Japanese blooms cut with long stems, and arranged amongst Ferns and other small-foliage plants, showed the decorative value of these varieties, and for twelve blooms, Mr. A. Cryer, gr. to J. A. KENRICK, Esq., Edgbaston, was 1st; his blooms were massive, and his method of arrangement neat, yet effective. Mr. R. Bullock, gr. to T. N. PUGOTT, Esq., Moseley, 2nd.

Incurveds were fewer than Japanese, but the quality left little to be desired. Twenty-four blooms, distinct, Mr. Crooks 1st, with well-finished blooms of middling size. Nelly Threlfall, King of Yellows, Bonnie Dundee, Madame Ferlat, Hanwell Glory, and C. H. Curtis being the more noteworthy varieties. Mr. A. CHANDLER was a good 2nd, with flowers that were a little lacking in finish. Mr. Goodacre, gr. to the Earl of HARRINGTON, Elvaston Castle, Derby, was a close 3rd.

The last named exhibitor was 1st for eighteen varieties, one of each, with nice blooms of favourite varieties. Mr. CHANDLER was 2nd in this class.

Groups of Chrysanthemums.—In the larger class there were fine exhibits, and all good. Mr. J. V. Macdonald, gr. to G. H. KENRICK, Esq., Edgbaston, was 1st; his plants bore large blooms, and were arranged in the form of a mound, so that every blossom could be seen; here and there *Palms* and *Codiaeums* were inserted to afford relief. Mr. W. Thomson, gr. J. WHITFIELD, Esq., Moseley, was a close 2nd.

In a smaller group, the competition was very spirited. Mr. J. Waldren, gr. to E. CABURRY, Esq., Northfield, was 1st, with a group rather too flat in form. Mr. FAUDRY was 2nd.

Plants were numerous, and good. For nine plants, Mr. O. Brasier, gr. to E. MARTINEAU, Esq., Edgbaston, was 1st, with large and excellently-flowered, pleasingly-trained specimens. Mr. J. MEDDUM was 2nd. Mr. BRASIER also was 1st for six Japanese, with plants 4 feet in diameter, freely flowered, of popular varieties; Mr. A. CRYER was 2nd. Mr. BRASIER also won for three Japanese with similar plants.

Pompon and single-flowered varieties were not numerous, Mr. MEDDUM winning in both classes with freely-flowered examples.

Fruit. Grapes, Apples, and Pears were plentiful and good, as were likewise vegetables. Mr. GOODACRE was the most successful exhibitor of fruits, and Mr. E. Beckett, gr. to Lord ALDENHAM, Elstree, Herts, for vegetables.

PUTNEY, WANDSWORTH, AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 8, 9.—This Society held a very pretty and satisfactory show of Chrysanthemums, decorative plants, fruits, and vegetables, in the Town Hall, Wandsworth, on the above dates. The Society has now held twenty-three annual exhibitions, and was never more flourishing.

There were groups of miscellaneous plants, and groups of Chrysanthemums only. In the class for Chrysanthemums only, an excellent exhibit came from Mr. THOS. MARTIN, gr. to Col. MITCHELL, Cannizzaro House, Wimbledon. The group occupied a space of 40 feet superficial, and the plants included in this space were exceedingly good, and bore fine flowers, among which such varieties as Mrs. Mease and M. Chenon de Leché were justly prominent. The exhibit was rightly awarded an extra as well as a 1st prize, for it was recognised as the best exhibit of any kind in the show.

The best group of miscellaneous plants arranged for effect was one from Mr. J. P. MCGREGOR, gr. to Lady HAY, North House, Putney.

Amongst exhibitors of specimen and trained Chrysanthemum plants were Mr. JNO. TWILLEY, 176, Merton Road, Wandsworth, who won a special prize for a group of eighteen plants; and Mr. J. CHANDLER, gr. to the Rev. Canon HAYGARTH, The Vicarage, Wimbledon.

A nice collection of four specimen Ferns was shown by Mr. G. HUTTON, gr. to G. E. FRENCH, Esq., The Camels, Wimbledon Park. The best Chinese Primulas were from Mr. J. DANK, gr. to JAS. HOOKER, Esq., Lombard House, Putney; Begonias Gloire de Lorraine from Mr. THOS. MARTIN; *Solanum capistratum* from Mr. T. PETH, gr. to JAS. DICKIE, Esq., Lower Park, Putney Heath; plants suitable for table decoration from Mr. F. H. GODDARD, gr. to W. J. LANCASTER, Esq., Lower Putney; and *Capsicums* from Mr. MYNETT, gr. to J. CARLISLE, Esq., Ash House, Putney Heath.

CUT BLOOMS OF CHRYSANTHEMUMS.

Most of the classes for cut blooms were well contested, but they were remarkable for the fact that many of the best were won by the same exhibitor, Mr. Alex. Smith, gr. to the Lady SUPERIOR, Convent House, Roehampton. Collections from this garden were placed 1st in the classes for twenty-four bloom

twelve blooms, and six blooms (Japanese), and for six blooms of Japanese incurved. In the class for twelve blooms, Mr. Smith was followed by Mr. S. MYNETT, who included an excellent flower of the variety Mrs. Weeks, which was the premier Japanese bloom in the show. Varieties shown finely by Mr. Smith were Madame Carnot, Mrs. Mease, Simplicity, Vivand Morel, and Le Grand Dragon. Mr. Smith was less successful in the classes for incurved flowers, those for twenty-four blooms and for twelve blooms being won by Mr. C. Bentley, gr. to Col. Bosworth. Mr. A. Smith was 2nd in the latter class, and had the premier incurved bloom in a specimen of C. H. Curtis. Mr. BENTLEY had the best exhibit of twelve bunches of Pompons, and the best six sprays of single-flowering varieties.

Among successful exhibitors of baskets and vases of flowers, also of bouquets, &c., were Mr. A. Newell, gr. to Sir Edwin Saunders, Wimbledon; Mr. S. MYNETT, and Messrs. WALBORN & SON. Mr. GEO. STEVENS and Messrs. MAHOOD & SON, Putney, exhibited floral designs.

Mr. A. SMITH, Mr. H. HAYNS, gr. to Sir Andrew Scoble, Wimbledon Common; Mr. Prentice, gr. to J. D. CHARRINGTON, Esq., Roehampton; Mr. Jos. Sparks, gr. to R. BEDINGFIELD, Esq., Roehampton; and Mr. PETT, took 1st prizes for fruit.

An attractive non-competitive group of plants from Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, contained Cattleya Dowiana aurea and Dendrobium Phalaenopsis in bloom, also some fine-coloured Codieums, as C. Warreni, Prince of Wales, &c., Begonia Arthur Mallett, Erics in bloom, &c.

The hon. secretaries are Messrs. J. F. McLeod and W. Reynolds.

ISLE OF THANET CHRYSANTHEMUM.

NOVEMBER 7, 8.—A capital show was that held by the above Society in the Hall-by-the-Sea at Margate. The groups of Chrysanthemums were arranged in circles, alternating with groups of miscellaneous plants down the centre of the room, and had a pleasing effect. Cut blooms, fruit, baskets of flowers and foliage, and vegetables, were extensively shown, and deserve every commendation.

To class 1, a Silver Challenge Cup, value fifty guineas, given by the President, P. H. G. Powell Cotton, Esq., Quex Park, together with £5 from the Society, for a group of Chrysanthemums with foliage plants added for effect, was easily won by Mr. CORNFORD, gr., Quex Park, Birchington. The same exhibitor took 1st prize for a miscellaneous group. In both classes Mr. CHAPMAN, florist, Ramsgate, took 2nd position. For twenty-four incurved Chrysanthemums (cut blooms) distinct, Mr. CORNFORD was 1st; and W. E. S. DRAX, Esq. (gr. Mr. Bond), won first honours for twenty-four blooms of Japanese, this exhibitor staging heavy blooms that were much admired. Mr. G. BROCKMAN, Addington House, won the Silver Cup presented by F. Marsden-Cole, Esq., for twelve incurved, and twelve Japanese blooms.

Apples and Pears were well shown by J. T. FRIEND, Esq., Northdown (gr., Mr. Burgess). Mr. CORNFORD, Quex Park, also showed good fruits. Grapes were somewhat below the average. Lord DECIES (gr., Mr. Enden), secured 1st prize.

Potatoes were well shown, the tubers being clean and even; and baskets of vegetables were good.

This was the fourteenth exhibition of the society held at Margate, and its reflects great credit on the energetic Hon. Sec., Mr. Levett, and the Committee.

SOUTHAMPTON HORTICULTURAL.

NOVEMBER 6, 7.—Never in the history of the Royal Southampton Horticultural Society has such a capital autumn exhibition been held, as that which took place on the above dates in the spacious Skating Rink.

The building is admirably adapted for a Chrysanthemum show, and a good general view of the whole exhibition is to be obtained from the galleries. The groups and plants were above the average, both as regards quality and the size of the blooms. In the cut bloom classes, a very noticeable improvement was manifest, and one of the most notable features in this section was the remarkable form shown by Mr. H. H. LEES, Cedar Road, Southampton, an amateur. A very welcome addition to the schedule this year was the introduction of three classes for blooms on long stems shown in vases, and this proved to be a great attraction. The arrangements were, as usual, in the very able hands of Mr. C. S. Budge, Hon. Sec.

For the best collection of plants in a space 10 feet by 7 feet, Mr. G. HOSEY, gr. to J. C. E. D'ESTERRE, Esq., Elmfield, Millbrook, was a good 1st, with a beautiful group; Mr. B. HENLEY, Woolston, 2nd. Mr. HOSEY was also to the fore in the two classes for plants.

There were eight entries in the class for six vases of Japanese blooms, three in a vase, and the whole made a splendid display. Small Ferns, &c., were arranged amongst the vases, and this, together with the separate stems of foliage on the long stems of the blooms, greatly assisted in the general effect. The premier award fell to Mr. H. H. LEES, who staged the following varieties:—Australie, Mrs. W. Mease, Phœbus, Mrs. Barkley, very fine; Le Grand Dragon, and Vivand Morel, splendid colour. The blooms were wonderfully fresh and well staged. Mr. G. Hall, gr. to Lady ASHBURTON, Melchet Court, Romsey, was 2nd, with Mrs. Mease, Mr. T. Carrington, Mrs. Coombes, Chenon de Leché, Madame Carnot, and Vivand Morel; Mr. E. Carr, gr. to Mrs. GILLET, Fair Oak, Bishopstoke, 3rd.

For twenty-four Japanese blooms in sixteen varieties there

were five entries, Mr. G. Nobbs, gr. to H. M. The QUEEN was awarded 1st prize, and included a fine specimen of the variety Mrs. Mease, which proved to be the premier Japanese bloom in the show; Mr. H. N. MOSE, florist, Sholing, was an uncomfortably close 2nd.

The class for eighteen Japanese, distinct, also brought five competitors. Mr. L. Dawes, gr. to Mrs. OOLIVIE, Rosecroft, Hambleton, was 1st with splendidly coloured blooms; Mr. G. NOBBS followed.

Mr. DAWES again led in the class for twelve Japanese, distinct, with Phœbus, Duke of York, E. Molyneux, and Chenon de Leché, as his best; Mr. G. HALL, 2nd.

Mr. NOBBS led for twelve incurved, distinct; Mr. W. G. ADAMS, florist, Southsea, 2nd.

Six competed for twelve Japanese incurved. Mr. LEES was 1st, with Emily Towers, Master H. Tucker, Mrs. H. Weeks, Lady Ridgway, Oceana, Mrs. Cursham, and Mr. T. Carrington; Mr. G. HALL 2nd.

For six white blooms in two varieties, shown in vases, Mr. LEES was a good 1st with Mutual Friend and Mrs. J. Lewis; and for six blooms in vases (white excluded), with James Bidecove (splendid colour) and Oceana.

The entries in the section confined to gentlemen's gardeners and amateurs were very numerous. The class for eighteen blooms brought eight entries. Mr. C. Smith, gr. to W. F. FORWOOD, Esq., Hook, Hants, was 1st.

There was keen competition in the amateur division for twelve Japanese blooms, distinct, and the Silver Challenge Cup, presented by Mr. E. BROWN, jun., was won for the second year in succession by Mr. H. H. LEES. His stand comprised splendid examples, as follows:—Australie, Oceana, V. Morel, Le Grand Dragon, Miss Alice Byron (fine), E. Molyneux, Phœbus, Mrs. Barkley (splendid), Mons. Pankoucke, Chenon de Leché, Miss Maud Douglas, and Mutual Friend; Mr. T. ROBB, Woolston, was 2nd.

The classes for fruit and vegetables were well filled, and the miscellaneous exhibits were both numerous and of good quality.

LEICESTER CHRYSANTHEMUM.

NOVEMBER 9, 10.—The fourteenth annual exhibition was held in the Temperance Hall on the above dates. The entries compared very favourably with those of last year, and the high reputation for quality which the Society has gained from previous shows was fully upheld. In the classes for cut flowers, about 1,000 blooms were staged, over 200 being sent by working men in receipt of weekly wages, to compete for the special prizes given by the late Mr. Thomas Brooks, of Barkby Hall.

The specimen plants of Chrysanthemums, supplemented by the decorative Palms, in a class included in the schedule for the first time, made a good show, and the dainty table decorations, amongst which were some from new exhibitors, attracted much attention.

Exhibits of fruit were as good as ever, the competition being very keen indeed for the prizes given by Sir Thomas Wright. The arrangements were ably carried out by the Hon. Sec., Mr. R. G. Lawson, and a representative committee.

ULSTER HORTICULTURAL.

NOVEMBER 13, 14.—An extraordinarily fine show, good all round, was held in the St. George's Covered Market—an ideal place in which to hold a horticultural and agricultural exhibition. The show was opened with much ceremony by Mrs. Dunbar Buller, attended by the Lord Mayor, Lady Mayoress, and many other civic and other dignitaries. The entries were the largest the Society has ever had, and the quality of the exhibits were quite equal, if not superior, to anything witnessed in any previous year.

The greatest interest centred round the "twenty vase class, three blooms of each, Japanese, distinct, varieties." The 1st prize in the class, amounting to £20, was awarded to Lord ASHBROOK, Darrow Castle (gr., Mr. F. MacKellar), for a magnificent set of blooms of Madame Carnot, Mrs. W. G. Palmer, John Seward, Mrs. J. W. Barks, Pride of Exmouth, G. J. Warren, Vivand Morel, Mrs. W. H. Lees, Lady Hanham, Mrs. Mease (the premier bloom), Eva Knowles, Mrs. Cookes, Le Grand Dragon, Lord Salisbury, Mrs. J. Lewis, Pride of Madford, Mrs. Barkley, Nellie Pockett, Australie, and Madame L. Remy. Captain G. NICHOLSON (gr., Peter Brock), was awarded 2nd prize for smaller numbers of vases, viz., fourteen.

The class for eight vases, each to be filled with three distinct specimen blooms, brought out a good competition for the extremely liberal prizes, chiefly consisting of varieties mentioned above, the exhibits in this class forming a very pleasing feature of the display.

Forty-eight Japanese in thirty-six varieties, displayed on the usual show-boards, brought some fine flowers. The winner of the 1st prize was Lord ASHBROOK; and 2nd, THOS. H. TORRENS, Esq.

The table of decorated dessert fruit, 8 feet by 4 feet, brought three exhibits, Lt.-Gen. PAKENHAM leading with Muscat of Alexandria and Gros Maroc Grapes, Hero of Lockinge and Sutton's Al Melons, Coe's Golden Drop Plum, Hacon's Incomparable, Marie Louise and Pittaston Duchess Pears, Cambsunethan Pippin, Cox's Orange, and King of Tomkin's County Apples, and Beurré Diel Pears; 2nd, Lord MCNEIL. The decorations were not of the best.

In the hardy fruit class for twenty-four dishes of Apples, an exceedingly well coloured display was found, and it is a

pity that the Irish growers cannot be induced to bring their productions to the Crystal Palace Fruit Show, possibly they may do so if the show is held later, as has been suggested. In the competition for the best six dishes of Pears, some well-developed and highly matured fruit came to the front.

Vegetables.—In these classes the competition, as may be expected, was very strong, and Potatoes were exceptionally good—in this the home of the noble tuber, although the season has been somewhat too moist for them. Trade groups were exceedingly fine, and formed a strong feature of the show.

Messrs. HUGH DICKSONS had an excellent and well arranged group set up, à la Shrewsbury fashion, lighted at night by electricity, and furnished with arches to which Pitcher plants, choice Crotons, and trailing plants were suspended. The size of this group measured about 30 feet by 20 feet. This firm showed likewise about 200 dishes of highly coloured hardy fruit, the display being set off by table plants. Another of their groups consisted of choice hardy coniferous trees and shrubs with foliage.

The exhibits of Messrs. DICKSONS, nurserymen, Newtownards, consisted of a magnificent stand of 200 varieties of highly coloured Apples and Pears, a quantity of very fine vegetables, and a number of designs carried out with cut flowers, &c.

Messrs W. DRUMMOND & SONS, of Dublin, showed Swedes and other roots in the competitive classes, carrying off with their strain of "Extra Improved Swede" the 1st prize, which they have succeeded in doing for three years in succession.

The BELFAST PARKS COMMITTEE showed a group of Palms and other foliaged plants well arranged, and furnished with models of fountains and other garden ornamental objects.

Some beautiful Violets were set up in a pleasing manner by Mr. HOWE, nurseryman, of Bristol. *Correspondent.*

ROYAL HORTICULTURAL OF IRELAND.

NOVEMBER 6, 7.—The annual Chrysanthemum exhibition of the above Society was held on the above dates in the buildings attached to the Royal Dublin Society at Ballsbridge. The weather was utterly discouraging, and besides marring the attendance, it deterred many from exhibiting who had intended to do so. Cut blooms were good, though several blooms were past their best. Pot plants and groups were well staged, notably in the group of six Chrysanthemums from Mr. Cavanagh, gr. to Mr. R. W. BOOTH, Victoria House, Dalkey; they were in reality specimens, and in the expressed opinion of the judges the finest they had seen. His specimen of Vivand Morel, whose crown was a mass of bloom, evoked admiration. Cyclamens were splendid from Mr. Davis, gr. to Mrs. GOODBODY, Obelisk Park, Blackrock. Table plants, though well furnished, were rather too large in size. Fruit from amateurs was good, but the specimens were of medium size in the nurserymen's classes.

PLANTS IN POTS.

For a group of Chrysanthemums and foliage plants, staged for effect, the 1st prize was awarded to Mr. W. CURRY, gr. to Mr. MELES, for a stand of thirty-six pots of Chrysanthemums.

For the Ardilaun Challenge Cup, Mr. P. Geoghegan, gr. to Mr. JOHN MILLER, Baginbun House, Sandymount, was again declared the winner; his group contained some fine flowered specimens.

For a group of foliage and flowering plants, Chrysanthemums included, Mr. J. Byrne, gr. to Mr. G. DRIMMIE, Bellevue, Booterstown, was an easy 1st, with a choice stand composed of Palms, Crotons, Ferns, Chrysanthemums, Begonias, and Orchids; of the latter Odontoglossum grande, Oncidium varicosum Rogersii, and Dendrobiums, were profusely bloomed.

LORD ARDILAUN, St. Ann's, Clontarf (gr., Mr. A. Campbell), had a group of miscellaneous plants (non-competitive); this included Primulas, Salvias, Oxytropis, Cyclamens, Begonia Gloire de Lorraine, Palms, Chrysanthemums, &c.

MALCOLM INGLIS, Esq., Montrose, Donnybrook (gr., Mr. P. Harper), showed an effective exhibit of decorative plants (non-competitive), comprising Marantas, Dieffenbachia, Palms, Chrysanthemums, Cattleya labiata, Crotons, Begonias, &c.

CUT BLOOMS.

For forty-eight Japanese, distinct, Mr. P. BROCK, gr. to Captain NICHOLSON, Glenmor, Drogheda, was 1st with a choice group, including extra good blooms of the following varieties:—Lord Ludlow, Mrs. Lees, Chatsworth, H. J. Jones, Lady Byron, Mr. F. Brewer, Lady Ridgway, Oceana, Madame P. Rivoire, Swanley Giant, Madame G. Heni, Simplicity, M. Pankoucke, and Edith Tabor. The 2nd place was awarded to Lord ASHBROOK, Darrow, Queen's County (gr., Mr. McKellar).

For twelve varieties in vases, three blooms of each, for the Waterhouse Challenge Cup, value £10, Captain NICHOLSON was declared the winner with Pride of Madford, Swanley Giant, Mrs. J. Lewis, Amiral Avellan, and Ella Curtis. The 2nd prize went to Lord ASHBROOK.

For a stand of twenty-four blooms, in the same number of varieties, for the Gardeners' Challenge Cup, value £10 10s., Lord ASHBROOK was 1st, with a goodly exhibit of the following varieties: Mrs. J. W. Barks, Madame Carnot, Lady Hanham, Mons. Hoste, John Seward, Mrs. W. Popham, Madame L. Remy, Pride of Madford, Simplicity, Madame C. Bruant, and Edith Tabor. 2nd, Colonel CRICHTON, Mullaboden, Ballymore Eustace, Co. Kildare.

For a stand of twenty-four blooms of ingraveds, in the same number of varieties did not evoke keen competition. Lord Ashbrook won 1st prize.

For the Apple and Pear varieties, R. J. HARRIS, Saintbury, Killarney, was 1st; 2nd, Lord Ashbrook.

FRUIT AND VEGETABLES.

For four bunches of Grapes in two varieties, the 1st prize was awarded to Mrs. MAUDE, Merriem, Dublin (gr., Mr. Colgan), for superb bunches of Black Alicante and Muscat of Alexandria; 2nd, Mrs. GOODBODY, Obelsk Park, Blackrock (gr., Mr. Davis), with Trebbiano and Gros Guillaume.

In the collection of twelve varieties of dessert Pears, Lady BRY, Charleville Forest, Tullamore, was 1st, with Beurre Clairgeau, Duchess d'Angoulême, and Consolider de la Cour, were very fine. She likewise retained supremacy for a collection of six varieties, Marie Louise was good.

For a collection of Apples of twelve varieties, composed of six baking and six dessert in dishes of six each, Mr. Hartley, gr. to Mr. W. GORMAN, Mount Melick, was 1st, with large and well-coloured fruits.

For a collection of twelve kinds of vegetables, Lord Ashbrook, Woodlawn, co. Galway (gr., Mr. Porter), was 1st; Gen. Sir ROGER PALMER (gr., Mr. Stringer) was an exceptionally close 2nd.

NURSERYMEN'S EXHIBITS.

MESSRS. RAMSAY & SON, Ballsbridge, had a huge group of foliage and flowering plants, comprising Ghent Azaleas and Lily of the Valley (retarded), Cattleya bicolor and C. labiata, Odontoglossums and Cypripediums, Crotons, Bouvardias, Ericas, Lilioms, Spireas, Dracenas Doucetti and Godseffiana, also a selection of floral designs.

Sir J. W. MACKENZIE, LTD., had a meritorious display of fruit and vegetables. Of the former, outdoor Peaches, that late autumn variety Lord Palmerston, was in abundance; and Pitmaston Duchess amongst the Pears was superb.

MESSRS. ALEX. DICKSON & SONS, Newtownards, had a fine display of fruit. Over two hundred dishes were shown; the fruits were well coloured, and large in size.

MESSRS. SANDERS & SONS, Friar's Walk Nurseries, Cork, had a display of 150 dishes of fruits.

MESSRS. TAIT & CO., Capel Street, Dublin, had a representative collection of fruit.

MESSRS. RIVERS & SON, Sawbridgeworth, through their agents, MESSRS. EDMONDSON, Dame Street, staged a fine display of fruit.

MESSRS. HOUSE & SON, Westbury-on-Tyrm, had Violets staged in tall glasses.

MESSRS. W. WELLS & CO., LTD., of Earlswood, Redhill, Surrey, had a representative collection of Chrysanthemums; the following were fine blooms, Khaki, C. J. Salter, Charles Longley, Mrs. A. C. Milne-Redhead, W. R. Church, Souvenir de Exposition de Paris, and Mathew Smith. Amongst the Anemone-flowered types, Herbert Henderson, with pale pink florets, was a fine flower.

HORTICULTURAL MEETING AT GHENT.

At the meeting of the *Chambre Syndicale des Horticulteurs Belges* held at Ghent on November 5, the following awards were made:—Certificates of Merit for Chrysanthemums from M. DE VIESSE-REMBES (*à l'unanimité*); for Chrysanthemum

Coombes (Jones, 1900), from M. le Comte O. DE KERCHOVE DE DENTERGHEM; for Cattleya Mantini, C. aurea x C. Bowringiana, from M. G. VINCKE-DUJARDIN of Bruges (*par acclamation*), and for C. labiata "Roi des Pourpres," and for C. labiata x C. Eldorado alba, from the same exhibitor. Simi ar awards were made for Lælia-Cattleya var. Varjenskijana, from M. le Marquis DE WAVRIN; for C. labiata autumnalis, C. hyb. C. labiata x C. Dormaniana, C. S. Légeriana, C. labiata autumnalis Lindeni, Lælia hyb. Gattoiana var. Moortbeekensis (*à l'unanimité*), Cattleya labiata autumnalis var. "Georges Putzys," C. labiata autumnalis var. (*à l'unanimité*), C. Harrisoni var., Lælia præstans var. amabilis (*par acclamation et avec félicitations du Jury*) Cattleya labiata autumnalis var. "Marie Henriette de Wavrin," C. Gaskelliana alba, Lælia præstans var., Vanda cœrulea var. "Arthur Van de Heede," Vanda cœrulea var. "L. Desmet Duvivier" (*à l'unanimité*), V. cœrulea var. "Camille Van Cauwenbergh" (*à l'unanimité*), and V. Sanderiana var. (*par acclamation*); all these Orchids being from the Marquis DE WAVRIN. The same awards were made for Cattleya aurea species, C. Hardyana var. "Madame Desmet-Duvivier," C. gigas var., and C. Hardyana var., all from Mr. M. VERDONCK; for Cypripedium memoria Monjii, from M. MAES BRAEKMAN; Cattleya labiata, from M. G. VINCKE-DUJARDIN; Houletia Clæsiæna, from M. FL. CLAES; for a lot of cut Chrysanthemums, 1900 novelties, from M. E. FIERENS (*à l'unanimité*); cut Chrysanthemums from the same exhibitor (*par acclamation et avec félicitations du Jury*); and for Chrysanthemums from M. le Comte O. DE KERCHOVE DE DENTERGHEM.

The Jury highly commended the cultural demonstrations showing the effect of the different manures employed in Chrysanthemum cultivation given by M. Buysens, head gardener of the winter-garden of the Count DE KERCHOVE DE DENTERGHEM, and awarded him for them a Certificate of Merit (*à l'unanimité et avec félicitations du Jury*).

The following Certificates were allotted for cultivation and flowering: for *Grevillea Preissii*, to M. TH. PIENS (*par acclamation*); for Cattleya labiata autumnalis var. "Meusine," to the Marquis DE WAVRIN; for *Oncidium ramosum*, to Mr. M.

VERDONCK; *Philœa ericoides*, to M. E. BEUINGHUIS, and for *Baueria rubioides*, to the same exhibitor (*à l'unanimité*).

A Cultural Certificate was accorded for *Arachis Sessilis* foliis argenteis, from M. PROST DE BAKKER; and a Mention for a set of *Orelands* from M. FL. CLAES; seedling Kentia from MM. DURIEZ FIERENS, which the Jury hope to see at some future show; for *Cattleya labiata autumnalis* var. "Gerard de Geest," from the Marquis DE WAVRIN, and for Cattleya Hardyana var., from Mr. M. VERDONCK.

SCOTTISH HORTICULTURAL.

(By Telegraph.)

NOVEMBER 15. The twenty-fourth show of this Society, which was opened in the Waverley Market, Edinburgh, on the above date, was a marked success. The entries compared favourably with those of last year. The City of Edinburgh Prize Plate, value £20, given by the Lord Provost, and £5 by the Association, was won by Mr. THOS. LEST, gr. at Keir, Dunblane, who showed twenty vases of blooms of the highest quality. The Scottish Challenge Cup was won in a close competition by Mr. DAVIS NICOLL; 2nd, Mr. T. LEST.

MISCELLANEOUS SOCIETIES.

Croydon and District Horticultural Mutual Improvement.—A well-attended meeting of the members of this Society was held on November 6, when Mr. W. J. SIMPSON, the Gardens, Falkland Park, gave a paper on "Hardy Fruits." Mr. Simpson gave practical hints upon the preparation of the ground, selecting and planting of trees, also upon suitable varieties of each fruit for both villa or large gardens and for orchards. The newer varieties of Blackberry were mentioned, and their adaptability to garden cultivation described. The Almond was suggested as a suitable stock to graft the Peach and Nectarine on. Mr. J. R. Box exhibited about thirty dishes of Apples and Pears in fine condition.

Devon and Exeter Gardeners.—The opening lecture of the winter session was given on October 31, in the Guildhall, Exeter, Mr. Andrew Hope (Hon. Sec.) presiding. The lecturer was Mr. Allen H. Ware, Ph. Ch. of the Royal Albert Memorial College, Exeter, the subject being "Studies in Plant-life." The lecture was well illustrated by limelight-pictures. Mr. Ware dealt chiefly with leaf-structure, describing the varied situations of stomata according to the conditions under which the plant existed, the functions of stomata, and the important part they fulfil in building up the plant. Chlorophyll and its uses were also dealt with, as also the circulation of the sap. The subject was illustrated by a typical collection of plants, namely—*Sarracenia*, *Tillandsia*, *Ruscus*, *Spartium*, and others, furnished by Mr. P. C. M. Veitch. These were closely examined by the audience, which, on this occasion, comprised students from the Exeter Technical College, and the teachers from the Middle and St. John's Hospital Schools. In moving a vote of thanks to the lecturer, the chairman referred to the fact that comparatively few gardeners took up the study of botany as a science, notwithstanding the many opportunities afforded them for so doing; and he urged young gardeners to at least master the elements of so interesting, useful, and after the rudiments had been surmounted, so absorbing and delightful a study.

Wargrave Gardeners.—At the usual fortnightly meeting of the above Association, held on November 7, Mr. J. Caswell, gr. to the Rev. H. M. Wells, "Scarlets," read a paper on "Codiaums (Crotons) and their Management." After naming the different varieties of this ornamental foliage plant, he gave full directions for taking the cuttings, potting, the most suitable soil, and methods of cultivation. The various insect foes, and means for their eradication were given, and a long discussion ensued. The exhibits were of good quality, Mr. POPE providing a good group of Crotons to illustrate the paper by Mr. Caswell.

Beckenham Horticultural.—Mr. G. A. Blogg, on Nov. 9, gave a lecture at the Church House, on "The Cacti of the United States of America, Mexico, and California," and how to cultivate them. Mr. Thornton (Chairman of the Library Committee) introduced the lecturer, and also put upon the screen some excellent lantern slides, taken at Kew, and from specimens in Mr. Blogg's collection. Messrs. Cannell & Sons, Swanley, sent a choice collection, which greatly assisted the lecturer in pointing out many interesting facts. It was mentioned that Cacti were much sought after 160 years ago, since which time, until a dozen years ago, they seem to have fallen into neglect, but Mr. Blogg (who is Secretary of the National Cactus Society) said there were now 250 persons in this country cultivating Cacti. The locality where the various species were found, and the conditions under which they grew in a state of nature were explained, also the economic uses to which some of them are put. Various species of *Melocactus*, *Mammillaria*, *Echinocactus*, *Cereus*, *Phyllocactus*, and *Opuntia*, were described and illustrated. The cultivation and general treatment during winter and summer, potting, applying water, and propagation, were explained. Cacti were strongly recommended for plunging out of doors in the summer, and an illustration of a beautiful arrangement which has been carried out in the Penge Recreation Ground, under the London County Council, was put upon the screen and highly commended. Several interesting questions were asked, and a hearty vote of thanks accorded Mr. Blogg for his most interesting and instructive lecture.

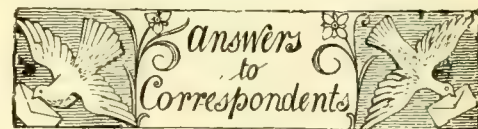
Reading and District Gardeners.—At the last fortnightly meeting of the Reading and District Gardeners' Mutual, Mr. C. P. Cretchley, of the Honey's Gardens,

Twyford, and formerly of the Royal Gardens, Kew, gave an interesting paper on "Ferns: Their Culture and Classification." A discussion followed, in which Mr. Stanton, Park Place, Henley-on-Thames; Dr. Stansfield Messrs. Powell, Blake, Bryant, Neve, Barnes, Burditt, and Fry, took part. A very unusual but interesting exhibit was made by Mr. STANTON, who staged blooms of *Aristolochia triphylla* (Mexico), *A. elegans* (Brazil), *A. gigas* Sturtevant (Guatemala), and fruits of *Diospyros kaki* (Japanese fruit), and *Gnava*. The other exhibitors were Dr. STANSFIELD (*Scelopendrium crispum grande*), Mr. ENLER, The Redlands Gardens (Lily of the Valley); Mr. F. LEVER, Hillside Gardens (odd sections of zonals). A vote of thanks was accorded the lecturer and the exhibitors. Two new members were elected.

ENQUIRIES.

PHLOX DYING OFF.—Our valued correspondent, "C. W. D.," writes: "I have two or three small beds of florists' late Phloxes. This year, and in former years, several suddenly withered at, during, or just after flowering. The stalks seem to retain vitality, and to be breaking at the base. If detached, are they likely to make healthy plants, and can you assign any cause for the sudden collapse? The soil is good, and the plants were watered, but had no manure either as top-dressing or dug-in. I enclose specimen. About one plant in ten withered; the others in the bed continuing green and healthy." [The roots appeared perfectly healthy. ED.]

WOULD some correspondent be kind enough to inform me the names of one or two plants other than the Killarney Fern, which are natives of Ireland, yet cannot be grown in England, other-wise than in a greenhouse, and why? *Gardener*.



AZALEA INDICA FOLIAGE TURNING YELLOW: *Regular Reader.* It may be that the soil in the pots has become impervious to water, or water has been applied in insufficient quantity to wet the balls of hard soil throughout. Place the plants in a tub of water for an hour. There is nothing in the shoots sent to account for the change of colour unless it be too dry an atmosphere following on exposure to the outer air full the summer.

BLACK SPOTS ON LEAVES OF CYPRIPIEDUM: S. S. *Asterina congregata*, Berk., is the name of the fungus forming the minute black spots. It is not at all injurious to the leaves, and can readily be removed by washing with soap and water if a little pressure is applied. *G. M.*

BOOKS: *W. Elson. Manual of Orchidaceous Plants*, issued by Messrs. Veitch & Sons, Royal Exotic Nursery, Chelsea, London, S.W. Williams' *Orchid Manual* is another, published by B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, N.

CHRYSANTHEMUMS AS BUSH-PLANTS: *W. G.* It should be an essential characteristic of bush plants, that they show as far as possible the natural habit of the Chrysanthemum, and it stakes be used merely as a support for the shoots, they will not destroy the habit of the plants, for stakes are necessary for this purpose in cases of some varieties when cultivated naturally in borders. But the shoots of a bush-plant must not be bent in the least for dwarfing them, and this constitutes the chief difference between this type of plant and the trained specimens. At the same time, the stakes selected for use should be as inconspicuous as possible. The National Chrysanthemum Society does not arrange classes for bush-plants, but you may refer to the excellent hints upon the subject in *Rules for Judging*, &c., issued by the Royal Horticultural Society, 117, Victoria Street, Westminster. In judging bush-plants, a maximum of sixteen points is there recommended, and they are made up as follows: display of bloom, four points; healthy foliage down to the surface of the pot, four points; freshness, four points; and inconspicuousness of supports, four points. We do not think you have a grievance, unless there was a tacit understanding that stakes were not to be used.

CHRYSANTHEMUM BLOOM: *J. D.* We do not recognise the rich pink variety as one we have seen previously, but it is certainly a beautiful flower, and the variety would be very useful for decorative purposes. If, as you suggest, it is a sport from niveum, it will be doubly valuable, because sports usually retain the habit of the parent variety. You ought to be able to judge whether it resembles niveum in growth and date of flowering, &c. There is much similarity in the blooms. Why not exhibit a plant and some blooms at the meeting of the Royal Horticultural Society to be held on Tuesday next at the Drill Hall, Westminster, or at the meeting of the Floral Committee of the National Chrysanthemum Society, to be held on Nov. 19, at the Royal Aquarium, Westminster. In cases of decorative varieties, it is necessary that a plant be shown, so that the habit of the particular variety may be seen.

CHRYSANTHEMUM LEAVES: *F. A. C. & F. S.* These are both cases of "rust," see *Gard. Chron.*, Oct. 8, 1898, p. 269, where you may find this fungoid pest illustrated and described. You can do nothing to the present plants until they are cut down, which had better be done at once, and the stems and leaves should be carefully burned. Get cuttings from a fresh source for cultivation next year, and whether this be done or not, syringe your plants occasionally in the spring, whilst they are making their growth, with a solution of potassium sulphide, at the strength of $\frac{1}{2}$ oz. to a gallon of water.

COMMUNICATION: *J. D. Godwin.* We have no record of anything having been received from you.

CORRECTION.—*Stevensonia grandifolia.* We regret that an error crept into our report of the Royal Horticultural Society's Meeting on Tuesday the 6th inst., inasmuch as Messrs. Sander & Co. were given as the exhibitors of this species of Palm instead of Messrs. Wills & Segar, Florists, of South Kensington.

FINGER-AND-TOE: *S.* What is the plant sent? Finger-and-Toe is confined to Crucifers.

FRUITS: *A. D., Quainton Road.* The fruits you send for naming not being numbered or lettered, we are unable to send you their names. Can you not send others?

GALTONIA CANDICANS: *W. P.* It should be lifted directly after flowering, early in the autumn. Now that the winter is upon us, you should, if possible, leave the plants undisturbed till March.

INSECTS: *B. Adney.* Julus and other millipedes which feed chiefly on decaying tissues, and are not of serious consequence. Liming the land and good tillage will get rid of many of them. Frequently turn up the surface soil, and let the insect-feeding birds get at them.

JUDAS TREE: *G. W.* The botanical name is *Cercis siliquastrum*.

LABURNUM: *S. H.* It is by no means rare for early-flowering hardy plants to flower again in warm autumns sparingly if the season has been favourable to the ripening of the wood.

LARGEST TRAINED CHRYSANTHEMUM: *Flora.* We have seen plants of 5 feet to 6 feet in diameter at the shows of the National Chrysanthemum Society, and plants grown in Japan of 9 feet in diameter have been figured in this Journal. The Japanese are clever cultivators, and plants of very large size are obtained by grafting branches of one or several varieties on to those of a mother plant, and thus extending it laterally on a fence for an indefinite length.

MONTBRETIA: *W. P.* The operations of lifting and planting may be done at this season, but better rather earlier. Plant only the bigger corms for flowering, and the remainder in nursery lines to grow to flowering size. Do not disturb the corms more often than once in three years if you are looking for good returns in flowers. Dig the land deeply, after heavily dressing it with decayed manure; mulch after planting.

MUSCI: *G. S., Barnsley.* These are not of horticultural interest, and we cannot name them.

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can consistently with our editorial work, but as the naming entails much labour and considerable cost we must request that they will observe the rule that not more than six varieties be sent at any one time.

The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay is often unavoidable.

W. H., Ireland. 1, Scarlet Crofton; 2, Bramley's Seedling; 3, London Pippin (Five-Crown Pippin); 4, Golden Russet; 5, Sam Young, also known as Irish Russet; 6, Norfolk Stone Pippin. —*S. M. T.* 1, Bramley's Seedling; 2, Cox's Pomona; 3, Mère de Ménage. —*J. R.* 1, Beurré de Rance; 2, Easter Beurré; 3, Doyenné du Comice; 4, Chaumontel. —*W. W.* 1, Margil; 2, Lemon Pippin; 3, Wealthy. —*B. C.* Your fruit was carefully packed, and labelled as we wish; unfortunately, one of the Pears was sent in an over-ripe state, and reached us quite rotten. 1, a small example of Bedfordshire Foundling; 2, Brown Beurré. —*O. J.* 1, Winter Quoining; 2, Forge; 3, Dumelow's Seedling; 4, Jaminette; Colmar Van Mons. —*Subscriber.* 2, Sops-in-Wine; 3, Spice Apple; 4, Winter Majetin; the others have been named in a previous issue. —*B. W. A.* 1, Iron Apple has been applied to your variety, but the correct name is Brabant Bellefleur; 2, Golden Noble; 3, Egremont Russet. —*J., Beds.* 1, Cornish Gillyflower; 2, Norfolk Beefing; both are good Apples, but 1 is not very prolific, and 2 is liable to canker in wet soils. —*G. R. S.* 1, Cellini; it is classed in some catalogues both for dessert and cooking purposes. 2, Carlisle Codlin, an old variety. —*H. B.* Grey Leadington. —*J. S.* All the fruits were in very bad condition. 1 and 4 were quite rotten when the box was opened; 2, Verte Longue; 3, Beurré d'Aremberg; 5, Dix. —*Enfield.* 7, Vicar of Winkfield; 8, Tardive de Mons. —*A. K.* 1, Durondeau; 2, much damaged, but apparently Beurré Diel; 3, Fondante de Charneu. —*Hilfield.* 1, Beurré d'Aremberg; 2, Epine du Mas; 3, Duchesse de Bordeaux. —*X. Y. Z.* 1, rotten; 2, Alfriston; 3, not known; 4, Mère de Ménage; 5, Stirling Castle. —*W. R.* 1, Lord Grosvenor, well kept; 2, Egremont Russet; 3, Golden Noble; 4, Annie Elizabeth. —*Enquirer.* 1, Sam Young; 2, Reineette du Canada. —*W. S.* 1, Darley Dale. Your Apples were named in our issue for October 27, p. 316, under the initials "W. W."

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.* —*J. W.* We cannot name your Rose. —*G. P.* 1, Cupressus funebris; 2, Variety of common Elder; 3, Salvia; 4, Salvia; 5, Salvia Bethelli; 6, we do not recognise, certainly not a Berberis; 7, Rubus australis; 8, Polygonum complexum. —*H. E. C.* 1, Crataegus pyracantha var. Lelandi; 2, Agatheae celestis; 3, Rudbeckia speciosa; 4, Swainsona galegifolia; 5, Spiraea callosa; 6, Aster, we cannot name. —*F. R. T.* 1, Fitzroya patagonica; 2, Retinospora plumosa of gardens, a state of Cupressus pisifera; 3, Cupressus thyoides, Retinospora leptoclada of gardens. —*J. F.* 1, Begonia Ingrains; 2, not found; 3, specimen withered, no flowers; 4, Begonia Dregel; 5, Pteris serrulata cristata; 6, Ophiopogon Jaburan variegatum; 7, Gymnogramma chrysophylla; 8, Polypodium iroides; 9, Dicksonia cicutaria (syn. Denstedtia adiantoides). —*H. D. W.* One specimen probably Stereum sanguinolentum, but too dry to exhibit stains. The other, so densely covered with mould as not to be identified—certainly not Tremella, but appears also to be a young Stereum. —*M. C. C.* —*S. W. F.* We believe your plant to be a form of Escallonia rubra. —*J. W.* 1, Photinia serrulata; 2, not recognised; 3, Spiraea confusa; 4, Escallonia rubra; 4, Salvia splendens; 5, Salvia splendens. —*J. W.* Eryngium pandanifolium. —*Paddy.* 1, a Salvia not in flower; 2, Oxalis Ortgiesii; 3, we do not know the cause of the spots; 4, Gymnosporangium, a fungus, which also grows on Savin; 5, Astrantia major; 6, Hypericum Androsimum. —*Adam.* 1, Zebрина pendula; 2, Adiantum variety; 3, Cacalia sp.; 4, Hamanthus sp.; 5, Rheo (Tradescantia) discolor; 6, Pellionia Daveana. —*A. H.* Astilia sp.; probably A. nervosa.

ONE YEAR'S LEY FOR MOWING: *J. W. D.* For this purpose the varieties selected must obviously be restricted to those which yield a large and immediate return; therefore, annual or Italian Rye-grass will form the basis of the mixture, which should be composed of the following varieties and quantities per acre:—Italian Rye-grass,

9 lb.; perennial Rye-grass, 1 lb.; Cocksfoot-grass, 3 lb.; Cat's-tail or Timothy-grass, 2 lb.; Broad Red Clover, 3 lb.; Alsike Clover, 1 lb.; White or Dutch Clover, 1 lb. Total, 20 lb. of seed per acre, which should cost not more than 10s. Two or Three Years' Ley. —The extended duration of a ley justifies the addition of a larger quantity of perennial Rye-grass, together with a little Meadow Fescue. A heavier total seeding is also considered necessary to make a satisfactory two or three years' ley than is required for a single season. The following is recommended: Italian Rye-grass, 4 lb.; perennial Rye-grass, 4 lb.; Cocksfoot-grass, 4 lb.; Meadow Fescue, 4 lb.; Cat's-tail or Timothy-grass, 2 lb.; Broad Red Clover, 4 lb.; White or Dutch Clover, 1 lb.; Alsike Clover, 1 lb. Total, 24 lb. of seed per acre. The mixture should cost not more than 13s. Temporary pastures are almost invariably sown with spring corn, and they require substantially the same treatment as permanent pastures, although as the varieties sown are strong growers, there is not quite the same necessity for extreme caution in preparing the land; but even here laxity and carelessness in mechanical preparation entail, very frequently, loss of plant. **Permanent Pastures.** —The following mixture of varieties and quantities per acre are recommended for a permanent pasture on medium soil: Meadow Foxtail-grass, 3 lb.; Cocksfoot-grass, 6 lb.; Hard Fescue-grass, 1 lb.; Tall Fescue-grass, 2 lb.; Meadow Fescue-grass, 8 lb.; Italian Rye-grass, 3 lb.; perennial Rye-grass, 4 lb.; Rough-stalked Meadow-grass, 1 lb.; Cat's-tail or Timothy-grass, 3 lb.; Alsike Clover, 1 lb.; perennial Red Clover, 2 lb.; White or Dutch Clover, 2 lb. Total, 36 lb. of seed per acre, which will cost about 26s. It is always false economy to purchase cheap mixtures of seed for pastures. The best class of seeds will yield the most profitable herbage, and of the highest nutritive quality, in the shortest space of time after being laid down. *J. J. Wilks.*

POTATOS WITH SCABBY SKIN: *H. R. M.* Some varieties of Potatoes become affected in the manner of those you send us, and it is common in some kinds of soil. Sometimes the injury is due to insects and slugs, but it is entirely superficial, and rarely goes deep enough to cause discoloration of the flesh. We cannot suggest a remedy. We have known scabiness to occur when coal-ashes have been freely used on the land, and then the injury is due to the young, tender tubers getting in contact with the ashes.

PRESERVING THE COLOUR OF MATURE VINE-LEAVES: *A Subscriber.* By placing the leaves between sheets of absorbent paper under pressure, changing the paper at intervals of three days till the leaves become nearly dry, they could be preserved for dishing-up uses in a cool room for several months, with the leaf-colouring fairly intact. It is possible that a sprinkling of a weak solution of salicylic acid would preserve them afterwards.

RUTABAGA, THE MEANING OF: *J. H. H.* The word in conjunction with Brassica campestris is used botanically for the Swedish Turnip. In Latin, *ruta* would mean that which is dug up, and would apply to a root growing partly underground, like Swedes and Turnips; the meaning of the latter half of the term, *baga*, is not clear.

SEWAGE SLUDGE: *T. W. W.* This stuff is of but little value as manure. We would advise you to give it a trial in the spring on growing crops as a top-dressing, or as a partial filling for seed drills.

THE GAS-TAR REMEDY AGAINST MEALY-BUG ON GRAPE VINES AND FIGS: *R. J.* Gas-tar, 1 quart; dry clay beaten to a fine powder, 2 quarts; flowers of sulphur, $\frac{1}{2}$ lb.; slaked lime, $\frac{1}{2}$ lb.; to which, after being well mixed together, boiling rain-water, 1 gallon, should be added, and the whole mixed to the consistency of thick paint. This, when cold, should be applied in the manner advised in the Calendar for "Fruits under Glass" in the *Gardeners' Chronicle* for October 20. It is one of the most effectual and safe to employ on Vines and Fig-trees as a winter dressing.

COMMUNICATIONS RECEIVED. —*B. W.* (marked for early insertion). —*S. H. W.* —*H. W.*, Kew. —*W. T. H.*, Alnwick. —*G. B. M.* —*J. M.* —*G. E. E.* —*B. C.* —*J. M. Stewart* —*F. L.* —*W. W.* —*G. D.* —*Carnarvon* —*Orchard* —*R. B.* —*J. S. W.* —*W. Townsend* —*J. Weathers* —*Cannell* —*G. M.* —*J. K. K.* —*W. W. A.* —*P. H. P.* —*A. C. F.* —*F. K.*, Berlin. —*S. W. F.* —*W. D. G. M.* —*E. B.* —*H. N. R.* —*F. C. H.*, Erfurt. —*R. T.* —*W. C. T. C.* —*G. F.* —*Mrs N.* —*W. Siehe*, Mersina. —*W. J. W.*, Ltd.

(For Markets and Weather, see p. viii.)



ORCHID-HOUSE IN AVENUE ROAD, REGENT'S PARK L. MOND, ESQ.,

THE

Gardeners' Chronicle

No. 726.—SATURDAY, NOV. 24, 1900.

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A MIDLAND GARDEN.

TWENTY-FOUR years ago I laid out and planted an acre of grass land as a garden, introducing as great a variety of hardy trees and shrubs as I could meet with. A very few years afterwards we had two of the most destructive winters of the century. The weather continually varied between sharp frosts and warm thaws. Many plants which will stand a long frost are destroyed by alternate freezing and thawing. After those two winters in succession, many of my choicest shrubs were gone. Garrya, Leycesteria, Morus, Viburnum Tinus, and half-a-dozen others, were hopelessly cut off. I never replanted them, but contented myself with what survived. These have now grown up, and a few of them are rather interesting specimens.

A fine Liriodendron, the Tulip Tree, is one of the chief ornaments of my lawn. It is about 25 feet high, with a well-formed head 20 feet in diameter, and a trunk 9 inches in diameter, forming a capital "shade-tree" in summer. For several years past it has flowered annually, and this autumn I have gathered a number of its rather curious fruit. Its peculiar and very handsome foliage takes on a beautiful rich yellow tint before it falls, which it does not do till quite late in the season. This is a tree which should be much more grown than it is. It seems quite hardy in this county of Leicester.

My next best ornamental tree is a Thuja borealis, 30 feet high, and 15 feet total diameter, feathered to the ground all round.

The name of this fine species seems to have undergone several vicissitudes. I looked for it in vain in Nicholson's Dictionary, under Thuja, Thujopsis, or Cupressus, all of which are names under which it appears in other books. At last I found another synonym, viz., Chamæcyparis, which is the one adopted by Nicholson, with the specific name Nutkaensis. But why does not this excellent work give its well known garden name, Thuja borealis, with a reference to the modern synonym? [Cupressus nootkatensis is the oldest name. See Conifer Conference Report, p. 30.]

My specimen of the curious Conifer Salisburi adiantifolia has had a struggle for its life, but it has pulled through, and is now 15 feet high, with a stem nearly 4 inches thick. The shoots of the year, which are from 1 to 3 feet long, have frequently been killed back for half their length by the winter frosts. It is probably from this cause that the tree is rather unsightly in shape. All the longer shoots curve upward near the base, and then grow almost erect, so that the tree looks stiff and narrow, as well as irregular in outline.

Another fine tree, too much neglected, is the Ailanthus glandulosa, my specimen of which has grown to the height of 30 feet, with a trunk 12 inches in diameter in the twenty-four years. It is a handsome tree, with very large pinnate leaves, like the Ash, but they drop early, and have no autumnal beauty. The Canadian Scarlet Oak, on the contrary, becomes highly ornamental during the month of October, the great leaves, about 8 inches long, turning first a rich brownish-red, and then a reddish-brown. My tree is tall, but the head is thin—not at all massive as one expects an Oak to be; perhaps it has been drawn up too much by close surroundings.

Until a few years ago I had a row of six Cupressus Lawsoniana, which had a fine effect; but most of them, ten or twelve years after planting, began to die at the bottom, and in two or three years more they became so unsightly that all but two had to be cut down. A specimen of the variety C. erecta-viridis, the upright-growing form, which was very pretty when young, is now half-dead also, and must come out.

A Spanish Chestnut, planted at the same time, has made a trunk of 15 inches diameter at 2 feet from the ground; and this year we have had a pound of fairly-ripened nuts from it. While the tree is young, the nuts do not swell to any available size. The Horse-Chestnut ripens its fruit at a much earlier age. The tree which has grown most rapidly of all is a Lombardy Poplar: it is now 50 feet high, with a trunk 22 inches in diameter. These figures do not quite correspond with the calculation that the age of our forest-trees may be roughly estimated by the diameter of the trunk, the average rate of growth, during vigorous life, being 12 inches in 50 years, with some allowance for the different species. Trees grown in a garden would no doubt have considerable advantage from the cultivation of the ground, the manure, and the freedom from competition.

Among my fruit-bushes I have one Red Currant, to the training of which I have given particular attention. It has nine old rods 5 feet long growing in a cup-shape without any support, and bearing on an average 10 lb. of fruit every year. It occupies scarcely 4 square yards of land. If the fruit could be sold at 2d. per lb., the land would yield 5d. per square yard per annum, which is a very profitable yield for a crop which requires so little attention, being equal to £100 per acre, while a farmer is happy if he can get £15 per acre for his corn.

On the walls of the house I have an interesting creeper, which does not appear to be much grown. This is Ercilla spicata, or Bridgesia spicata, an evergreen which adheres to the wall like Ivy, has pretty oval shining leaves with undulated margins, and bears little spikes of pale flowers. It is not equal to Ivy for making a thick covering, but it mixes well with other creepers, and has a charm of its own.

At one time I had a small bed of a dainty

vegetable, which came to me under the name of Stachys tuberosa. [S. tuberifera, Gardeners' Chronicle, 1888, January 7, p. 13, fig. 1. Syn. Crocuses and Chinese Artichokes.] I can find no such species in any book in my library, but the plant was very like a Stachys, and the tubers were distinct enough. They were about 2 inches long, and half an inch thick, constricted at short intervals so as to look like large caterpillars; we found them very palatable when simply boiled. The plant was perfectly hardy, required no attention, and produced tubers plentifully. The garden having been let to a stranger for a few years these plants disappeared. They were probably supposed to be weeds, and thrown away. Anne Pratt in her Flowering Plants, and Mrs. Lankester in Sowerby's Botany, both refer to the tuberous roots of Stachys palustris, but do not describe them, and from my recollection of the plant, which however is not very clear, I doubt whether it was that species. I have several examples of S. palustris in my herbarium showing the creeping roots, but with no tubers.

In an out-of-the-way corner of the garden there is a square yard of bare ground in front of a shrubbery which never gets dug or disturbed. In this spot I have found two very minute plants of some interest. One is a Moss Acaulon muticum, about the size of a pin's head, which bears a red capsule in the early spring. This capsule is of course smaller than a pin's head, being inclosed in the five or six leaves which compose the plant. It reminds one of the old conundrum "What is smaller than a mite's mouth?" to which the answer is "That which goes into it."

The other curiosity is an Hepatica, Riccia glauca, about the size of a threepenny-piece or less, merely a green fan-shaped scale lying flat on the ground. Both these little plants are extremely rare in this county, yet in this neglected corner they grow side by side. Concerning a near relative of the Riccia, there is a remarkable story to tell, but I will reserve it for another opportunity. The number of strange "casuals" which have appeared at odd times in my garden, has often puzzled me, but of these also I will not speak at present. No doubt any garden carefully watched and studied, would yield material for many interesting notes. The world of plants, in spite of all that has been done in it, is full of mystery still. F. T. Mott, F.R.G.S., Birstal Hill, Leicester.

NEW OR NOTEWORTHY PLANTS.

STANHOPEA STENOCHILA.*

This plant is allied to S. tricornis, Lindl., and to S. connata, Lindl., but differs from both at the first sight by its smaller flowers, not exceeding in breadth

* Stanhopea stenochila, Lehm. & Krzl., n. sp.—Planta pro genere parvula dense caespitosa; bulbis grosse pyriformibus 2.5–3.5 cm. altis, 2.5 cm. basi diam., obsolete angulatis; foliis longe pedicellatis cum petiolo 25–35 cm. longis, 8 cm. latis, ellipticis acutis; racemis plerumque bifloris, bracteis inanis magnis dense vestitis; sepalis dorsali oblongo-lanceolato v. elliptico, lateralibus oblongis subobliquis, petalis late oblongis subrhombicis omnibus acutis; labelli hypochilii hemisphaerico intus papillis magnis crassis carnosius dense vestito basi utrinque angulato, a mesochilio non canaliculato bene sejuncto, mesochilio in processum crassum antice bilobulum ibique liberum exeunte, cornubus latis cultriformibus acutis, epichilio rectangulo supra utrinque sulcato subconvexo apice triangulo acuto superne reflexo incrassato, toto labello pro genere parvo; gynostemio crasso per longitudinis alato utrinque arguto, alulis brevissimis acutis; rostellum ornithorhyncho tenui acuminato. Sepala 6 v. 6.5 cm. longa, 4 cm. lata, alba leviter purpureo-punctulata in basi, petala 4 cm. longa, 2.5 cm. lata, alba apice armeniaca interdum purpureo-maculata, labellum eburneum purpureo-maculatum, epichilium et mesochilium armeniaca, totum labellum 3.5 cm. longum, basi 2 cm., antice 1 cm. latum, cornubus pars libera 1.5 cm. longa.—Augusto, Septembri.—F. Kraenzlin.

those of a medium-sized *S. eornuta*. The most important characters are of course to be taken from the lip. It is, as all orchidists know, extremely difficult to give a satisfactory, and at the same time, a short description of this part of the flower. The basal part, or hypochile, is nearly two-thirds of a ball, with numerous thick fleshy warts on the inside; it is rather sharply separated from the middle part, the so-called mesochile. This mesochile is in our species not channelled in the middle, but, on the contrary, provided with a fleshy, tongue-like, longitudinal callus; on both sides we have acute, sharply compressed knife-shaped processes or arms. The epichile at last is a narrow, rectangular, tongue-like body, furrowed on both sides, and provided with a thickened-sharply reflexed triangular point. The column is very thick and massive, and closely appressed to the stiff cartilaginous lip.

The flowers, as said before, are comparatively small, the sepals are pure white, and the petals apricot-coloured, both with more or less numerous purplish blotches or spots at the basal half. The lip is ivory-white at the base, with purple blotches inside, and paler outside, the middle and anterior parts being more or less intensely yellow. I must add, that seen *en profil* the column and lip show some resemblance to the same parts in *S. saccata*, but in this species the mesochile is furrowed or channelled in the middle, not to mention other discrepancies. The description has been drawn up from five flowers conserved in alcohol, and from supplementary notes I received from the collector, Mr. F. C. Lehmann, German Consul in Popayan, Columbia, who gathered the plant on the west coast of Columbia, where it grows at a moderate height above the sea. It is to be hoped that we shall have the pleasure to meet in some months with fresh flowers, several plants having been imported by Mr. Lehmann into England, and purchased by Sir Trevor Lawrence, Bart. *F. Kränzlin, Berlin.*

LÆLIO-CATTLEYA BINOTI, Cogn., *hyb. nat. nov.**

At the end of last October I received from M. A. A. Peeters, nurseryman, of St. Gilles, Brussels, a curious Orchid found among a consignment of *Cattleya bicolor* sent from Brazil by M. P. Binot, of Petropolis. At first we thought this plant merely a form of *C. bicolor* with purplish-rose flowers; but a detailed examination showed that it differed from it in numerous points, of which the following are the principal:—Pseudo-bulbs diphyllous, or sometimes monophyllous, not exceeding 4 to 6 inches in length, with only from one to three joints; leaves pointed; peduncle very short, and uniflorous; petals with margins very slightly waved; lip with the characteristic form of that of *C. bicolor*, but less thick, and more erect, furnished at the base with two small rounded lobes, enfolding the base of the column, the terminal lobe almost flat, and entire at the summit, and above all, eight pollen masses, very unequal in size, characteristic of a *Lælio-Cattleya*.

This is, then, a hybrid, and one of the parents is certainly *C. bicolor*; the other must be a *Lælia* exhibiting the above-mentioned characteristics—very probably some form or other of *L. pumila*.

The lip is clear orange-yellow at the extreme base, with small lateral lobes, white, scarcely tinged with rose; all the rest a bright crimson-purple, excepting the part near the slope of the summit, which is paler. *A. Cogniaux.*

Lælio Cattleya Binoti × Cogn.—Pseudobulbis breviseulis, satis gracilibus, cylindricis, vix compressis, 1–3 articulis, mono-diphyllis; foliis patentissimis, coriaceis, concavis, ligulato-oblongis, acutis; pedunculo foliis multo brevior, unifloro; floribus roseo-purpureis, 11–12 cm. latis, segmentis carnosulis, patentissimis; sepalis planis, ligulato-lanceolatis, acutis, lateralibus satis brevioribus subfalcatis; petalis oblongis, acutiusculis, margine leviter undulatis, sepalo dorsali paulo brevioribus et satis latioribus; labello erecto, sepalis lateralibus paulo brevior, profundiuscule trilobato, lobis lateralibus minutis, basilaribus, late rotundatis, margine integerrimis, columnam amplectentibus, lobo terminali longissime lateque unguiculato, cuneato, apice late rotundato-subtruncato et leviter emarginato; margine vix undulato, disco inferne cæcis 10 gracilibus leviter undulatis munito; columna clavata, trigona, antice profunde canaliculata, satis nervosa. Ex Brasilia misit cl. Binot; A. cl. Peeters, culta.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT HAREFIELD HALL.

THE garden of Elijah Ashworth, Esq., situated at some elevation at Wilmslow, is most favoured as regards climate, of any in Cheshire. The Orchid-houses contain a very varied collection of rare species and hybrids. Distinct varieties of all the showy species, and fine hybrids, are sure to find a home at Harefield Hall. There are numerous rare species which have more botanical than floral interest. The raising of Orchids from crossings have received much attention from Mr. Ashworth and his gardener, Mr. Holbrook, for some years, but until quite recently with not much success. The seedlings, when the cross has succeeded, and the capsules contain good seed, come up very freely—in some cases nearly one-half of what is sown. There, as in nearly all other gardens, the method is to sow the seeds on the surface of the compost containing the parent plant, or a similar plant, as set forth in the *Gardeners' Chronicle*, Nov. 17, 1900.

In a small hothouse, entered from the corridor, Mr. Ashworth pointed out his greatest triumph in hybridising, viz., seedlings of a cross between *Lælia Digbyana* (seed parent), and *Cattleya Warscewiczii* Sanderiana. Several of the small, green, spherical bodies, representing the plants in the earliest stage, were to be seen, and as every care is taken to guard against mistakes, Mr. Ashworth is as certain as he can be that he has accomplished what others have failed to do, viz., raised a hybrid with *Lælia Digbyana* as the seed-bearing parent. *Cypripedium callosum* Sanderæ × *C. niveum*, and other promising seedlings are progressing in size, and a good plant of *Sophr. Cattleya* × (*C. bicolor* × *S. grandiflora*) is expanding its flowers, from which the elongated labellum indicating *C. bicolor* has protruded even from the half-formed buds. *Cypripedium insigne* Sanderæ, *C. i. Youngianum*, *C. i. Ernesti*, and other yellow-flowered forms of *C. insigne*; the noble *C. insigne* Harefield Hall variety, *C. × Leeanum giganteum superbum*, *C. × MacNabbianum*, and several of *C. × Haynald-Chamberlaini*, which is, so far, the handsomest of the *C. Chamberlainianum* crosses, are in bloom. Besides these, the house contained a selection of rare hybrids, such as *C. × Marshallianum*, whose handsomely-marked leaves are to some as interesting as flowers.

The next house was chiefly filled with hybrid *Cattleyas* and *Lælio-Cattleyas*, among them being the remarkable *L.-C. × Decia alba*. The third house visited had seedling *Cypripediums*, arranged together with several fine specimens of *Phalaenopsis Esmeralda Buysseana*, with several spikes on each plant; *Cypripedium × Wilmslowianum* (*insigne* Chantini × *Harrisianum*), a grand flower; *C. × Morganiae*, and others in bloom. In the fourth house visited were noted a fine selection of distinct varieties of *Dendrobium Phalaenopsis*, including the pure white form; and the variety *Ashworthianum*, a pretty thing with white flowers, having a delicate pink veining on the lip. Among the dark coloured varieties some very showy flowers were remarked.

The cool house was filled with *Odontoglossums*, *Masdevallias*, &c., some few of which were in bloom. Overhead were suspended nearly the entire stock of plants in this country of *Lælia majalis alba*, the flowering of which is looked forward to with great expectation; together with white forms of *Lælia pumila*.

In the large *Cattleya*-houses, some of them were maturing seed-capsules, the produce of which is likely to be rich in interesting things; one specially noted being *Lycaste Skinneri* × *Anguloa Ruckeri*. In this house as many of the white, or nearly white forms of *Lælia purpurata* as can be obtained were brought together, and in flower were *Maxillaria Lindenii*, and several fine plants of the dark purplish-chocolate coloured *Masdevalla Roezlii*, and other showy species.

The *Cypripedium*-house had a good show of

varieties of *C. insigne*, including most of the clear yellow-coloured varieties, *C. × Ashworthianum* (*Leeanum superbum × selligerum majus*), *C. Arthurianum* "Harefield variety," many *C. Spicerianum* and *C. Charlesworthii*, several showy crosses flowering for the first time, and a good selection of *Selenipediums*.

The large ornamental-house, in which *Musa Cavendishi* fruits each year, the plants producing their fruits alternately, the roof was furnished with specimen plants of varieties of *Lælia anceps*, of *Lælia Digbyana*, and others which are found to thrive in this manner, hung above the foliage plants.

ORCHIDS AT KEW.

Just now the following species among others may be seen at Kew:—*Bulbophyllum Medusæ*, with long, thread-like perianth-segments, the flowers aggregated in globose heads; *Calanthe Warpuri*, a low-growing species, with white flowers, from Madagascar; *Cattleya Loddigesii*, an old species, but very lovely in its delicate lilac and soft yellow shades. *Cynorchis purpurascens*, is a singular, low-growing species with broad, oblong leaves, and violet flowers, with a much-divided lip, and a long spur; *Dendrobium Phalaenopsis*, *Oncidium Forbesii*, *O. varicosum*, and numerous *Cypripediums* contribute to make the house more full of bloom than might have been expected at this season.

CATTLEYA LABIATA "MRS. J. BRADSHAW," &c.

The collection of Orchids belonging to J. Bradshaw, Esq., of the Grange, Southgate, is one that contains many fine varieties of *Cattleya labiata*, including several beautiful varieties having pure white sepals and petals. Among them *Cattleya labiata* "Mrs. J. Bradshaw," is perhaps the most beautiful, its flowers being large, of fine form, and the lip especially fine. It has a pale yellow tinge in the centre of the lip, and one of delicate blush on the front lobe. Its white flowers are seen at their best when the plant is associated with the richly-coloured varieties. *Cattleya × Mantini* grows very vigorously in this collection, and the plants have again flowered profusely this year.

NURSERY NOTES.

BEGONIAS IN WINTER AT MESSRS. J. VEITCH AND SONS, LTD.

THE race of Begonias obtained from *B. socotrana* crossed with other species and varieties, is a most valuable addition to winter-flowering plants for the conservatory. It also has an interest botanically, because of the readiness with which *B. socotrana* has crossed with species widely different from it, and from each other. In every case its influence has been so great, that its characters predominate in the crosses obtained from it. When it was introduced by Dr. Balfour, exactly twenty years ago, from the hot and dry island of Socotra, "one of the last places in the world in which a Begonia could have been expected to occur," it at once attracted the attention of horticulturists, because of its handsome, orbicular, peltate leaves, and bright rose-pink flowers, which were developed in December—"a season when such a plant is doubly welcome to the cultivator, as the Begonias of the Andes, which made so magnificent a show in the conservatory during the summer and autumn months, are then all long past flowering." Another peculiar character it possesses is, that of persistent flowers, as they last at least a month on the plant, and finally shrivel rather than drop off.

These characters naturally gave this Begonia a special interest with hybridisers, and in 1885 the first hybrid between it and a tuberous Andean Begonia was sent out by Messrs. J. Veitch & Sons, who named it "John Heal," in compliment to this clever plant-breeder. Compared with the lovely hybrids since raised for Messrs. Veitch by Mr. Heal, the first is perhaps the best in point of

attractiveness. No fewer than thirteen hybrids have been raised by him from *B. socotrana*, crossed with different varieties of the popular tuberous *Begonias* of Andean origin.

Whilst this species crosses so readily with other species and varieties of *Begonia*, it is noteworthy that in every case, so far, the progeny has been

the Socotra plant with *B. Dregei*, a South African species of little or no horticultural merit, but when married to the Socotra species by M. Lemoine it produced the plant which is perhaps most abundantly represented of all *Begonias* in gardens at the present time.

The Veitchian hybrids bid fair to provide a race

the work of improvement will proceed by leaps and bounds. We are never satisfied! Anyone who saw the beautiful new hybrids shown by Messrs. Veitch at recent meetings of the Royal Horticultural Society, will probably feel that we have much to be thankful for already; and if he has seen the thousands of plants, comprising a dozen or



FIG. 115.—WINTER-FLOWERING BEGONIA "MRS. JNO. HEAL": FLOWERS DEEP ROSE. (SEE P. 372.)

sterile in both sexes; consequently, no secondary hybrids have been obtained. The hybrids are, therefore, perpetuated only by means of cuttings; fortunately, however, these are produced readily enough.

Other breeders have obtained hybrids from *B. socotrana*, one of the very best being that named *Gloire de Lorraine*, the result of crossing

of winter-flowering *Begonia*, which will have as great a value, possibly greater, than the summer-flowering tuberous race. Already there are pinks, carmines, and crimsons among them, single as well as double-flowered, and in size they have reached a diameter of flower of nearly 4 inches. Mr. Heal is now working for white and yellow hybrids. If only the sterility of the race can be overcome,

so hybrids in the Feltham nurseries of Messrs. Veitch, he will be inclined to hold that nothing further is needed.

I saw there, in mid-November, a house 100 feet long, filled with plants in 5-inch pots, almost every one a ball or pyramid of leaves a foot high, crowned with a loose head of brilliantly coloured flowers. It may be worth while to set down the

names of these Veitchian hybrids with the year of their distribution, and a brief description of each:—

ADONIS (1887).—Flowers single, 3 inches wide, the inner petals much narrower than the outer, rosy-crimson, paler towards the centre.

ENSIGN (1896).—Male flowers 2½ inches, the petals nearly equal, rich rose-pink, the stamens replaced by a disk-like cluster of small petals, which are at first pink, afterwards bright yellow-green: female single. Flower-stalks self-supporting. Plants 18 inches high, bearing about twenty open flowers, are beautiful objects.

JOHN HEAL (1885).—A small plant with elegant racemes of flowers of a bright cerise colour.

JULIUS (1897).—The flowers of this are perfectly double, Carnation-like, bluish-pink, 2 inches wide, the pedicels too slender to carry the flowers upright without support, a fault common to all the really double Begonias.

MRS. J. HEAL (1895).—Flowers 3 inches wide, the petals equal and overlapping, rich rosy-red, produced freely on plants a foot high. An excellent decorative plant. (See fig. 115, p. 371.)

MRS. JAMES H. VEITCH (1900).—A new hybrid of exceptional merit. The stems are short, tufted; the leaves slightly concave, 3 to 4 inches across; racemes erect, loose; flowers 3½ inches wide, the petals oblong, equal, anthers bright yellow, stigmas orange-scarlet. The flowers might be called magnified flowers of *B. socotrana*, which they exactly resemble in their beautiful clear rose-pink colour. A plant a foot high, bore twenty-eight perfect flowers, most of which had been open over three weeks.

MYRA (1897).—A robust grower, remarkable for its long arching or drooping racemes of single carmine-rose flowers, 3 inches across. A good plant for basket-culture.

SUCCESS (1895).—Resembles Ensign, but is darker in colour, and the disk-like yellow-green central petals are more conspicuous. It is free-flowering, and the stalks are self-supporting.

SYLVIA (1899).—Similar to Julius, but darker in colour, and the inner petals shorter.

VENUS.—Like Winter Cheer, but the flowers are smaller and single; the plant is of compact bushy habit.

WINTER CHEER (1897).—A beautiful plant; erect, sturdy, free-flowering, the flowers 3 inches wide, the petals equal, rich rose-carmine, the male flowers with a disk-like cluster of small carmine petals instead of stamens, females five-petalled, almost circular in outline. Plants 15 inches high bore twenty to thirty open flowers.

WINTER PERFECTION (1898).—Similar to Ensign, but flowers larger and coloured rose-pink, semi-double 3 inches wide, the stalks self-supporting. Plants a foot through bore twenty or more open flowers.

Owing to their persistent flowers, these Begonias make a display from mid-October to February, the first to flower being Mrs. Heal and Myra, all the others expanding about a month later, except Winter Cheer, which is not fully out till December.

The following directions for the cultivation of these Begonias were supplied by Mr. Heal. The plants have not a distinct tuber like the Andean Begonias, the base of the stem remaining alive unless the rest is too dry, when this stem perishes, and the plant is consequently weakened. After the flowers are over, the plants should be rested in a dry greenhouse, but a little water should be given occasionally. They are started again the last week in May, when they are shaken out of the old soil, and repotted into a mixture of loam two-thirds, peat one-sixth, leaf-mould one-sixth, and sand. In August the tops are taken off for cuttings, and to induce a bushy habit. The plants are kept in an intermediate temperature, cooler than for Gloxinias, warmer than for the Andean tuberous sorts. The final shift is into 5-inch pots. Fumigation with tobacco or "XL-All," may be neces-

sary to keep down insect pests. For Begonia-mite (often called rust), a strong solution of soft-soap and sulphur in equal proportions is a certain cure when used several times as a dip. Cuttings put in during August, make nice little flowering plants by November. *W. W.*

ALPINE GARDEN.

SEDUM SPECTABILE ROSEUM.

THOUGH the type species is one of the easiest plants to multiply by division, there is proof that numbers of plants have been raised from seed, as is obvious from the number of poorly coloured forms that are to be met with in cultivation. When a distinct variety of worth springs up, the trouble of raising a mass of worthless seedlings is forgotten in the gratification of having something to be proud of. The roseate colour of the bloom is of a very deep shade; and in regard to habit, the variety is much bolder, rather taller, and the individual flower-heads larger and fuller than the type. At any time of the year the colour would be welcomed in so good and easily-managed a subject, but at this season, when flowers and dwarf plants in particular are becoming scarcer, such a plant is very valuable for the fine display of colour, of a rosy-crimson, its flower-heads create. *E. J.*

ACONITUM AUTUMNALE.

This plant is one of those herbaceous plants which are much benefited by replanting once in three years, for if left longer than this in the same place it almost disappears. Here it commenced to flower this year on October 19. A few spikes are fully developed, and some of these have not a flower open, which shows that it is one of our latest herbaceous flowers. It is valuable for its bright blue colour, which is much more pleasing than that of *A. napellus*. It withstands a few degrees of frost without injury. *W. H. Divers, Belvoir Castle Gardens.*

FOREIGN CORRESPONDENCE.

HOW HYPHÆNE VENTRICOSA PROTECTS ITSELF FROM FIRE.

WHEN travelling from Salem to Windhoek through Otjimbingwe, I saw, for the first time, in the garden of the station, a magnificent specimen of Hyphæne, the sight of which confirmed me in my intention, not to stop until I should find myself under the lofty crowns of these noble Palms in their native habitat. In Windhoek, I found in the Governor's garden a smaller, but from the root upwards, a two-stemmed specimen, and like the Otjimbingwe plant, very vigorous and healthy. Arriving at Grootfontein, my first proceeding was to enquire where the Palm forest was. My host gave me an opera-glass, and showed from south-west to south-east, where I could recognise, even with unassisted eyes, a peculiar bluish narrow stripe along the horizon. With the glass I could resolve that strip into the crowns of Palms. About the enormous grass plain, which I had to cross in order to get to the Palm forest, I have nothing to say, save that it is sprinkled here with *Tarchonanthus camphoratus* (Ditch Vahlbosches); there with solitary *Acacia Giraffæ*, and groups of *A. heteracantha*. A violet *Orobanchæ*, parasitic apparently upon grass roots, is common. Approaching the Palms, I observed here and there, small bushes of Palms, 10 to 15 feet high, consisting of four to six, and more stems, springing up from one point. They increase in number as one comes nearer to the forest, and form a real belt around it. This is not so thick as it seems to be from a distance, but is rather thin, and contains more other trees than Palms, such as *Rhus lancea*, *Acacia Giraffæ* and *heteracantha*, and three shrubby *Acacias*. Upon a square of 100 yards, are not more than two to ten high stemmed Palms, but at least twenty-five to thirty shrubby ones.

The observations which I made during the three days' sojourn among the Palms are the following, and are rather interesting. One Hyphæne seed never produces a single stem, but is usually a Palm-bush with three to ten stems. I have never seen three or more full-grown stems ascending from one common root, and only on three occasions two stems. It seems to me, that when the central, or main-shoot of a bush begins to form its real smooth stem, the surrounding shoots die off one after the other, as they are not required any more as a protection to the main stem against the injurious effect of the grass fires. The fires begin every year with the end of May, and only end with the beginning of the rainy season, i.e., October, November. They run very quickly over a plain, and the peripheral shoots of the Palm-bushes are perfectly fit to protect the central one. This is not at all a speculation of mine, but it is a fact, that I have seen many hundreds of such Palm-bushes whose peripheral shoots were most badly injured by running fire, whilst of the central one in such cases only the chlorophyll of the lower leaves was killed by the dry heat, looking therefore faded green, but this was never a serious damage. When I consider the innumerable quantity of Palm-bushes in this district, and further, the almost entire lack of crownless dead stems, and thirdly, that nobody makes use of the beautiful straight smooth stems on account of their enormous weight, I am led to the conclusion that the number of Palms is greatly increasing, and not diminishing, as is the opinion of other travellers. The bushmen are its natural propagators; they collect in October to December the ripe fruits, of which they eat the dry husk. This has a quite agreeable taste, similar to that of St. John's Bread. The large nuts containing an ivory-like extremely hard kernel, are thrown away as valueless, and germinate readily after the first copious rains. The soil, in which the Hyphæne grows, is in some places an excellent quite black sandy one, mixed with big pieces of a recent limestone; in other localities it is a fine red quartz sand. *Dinter, Windhoek, German S.-W. Africa, August 31, 1900.*

DIPODIUM PANDANUM (Bailey, n. sp.).

Growth of plant resembling a Pandanus. Stems 2 or more feet long, adhering to tree-trunks like some kinds of Pandanus or Freycinetia, often exceeding 1 inch in diameter, somewhat compressed, the internodes of the lower naked portion of the stems seldom much exceeding ½-inch long. Leaves distichous, very close-together, 1 to 2 feet long, sessile and tapering from 2½ inches broad to an acute apex; longitudinal nerves very prominent, two to three on either side of midrib, often with a strong transverse nerve below the middle of the leaf. Raceme with the peduncle about 1½ foot long. Flowers about twelve. Bracts of peduncle two or three, distant, larger than those subtending the flowers, ovate-acuminate, about 2½ lines long, glabrous, green. Pedicel with ovary about 16 lines long, slender, white. Sepals about 1 inch long, 4 lines broad, oblong, bluntly acuminate, with deep-red blotches on the back, faintly showing on the face of each segment. Petals like the sepals, but smaller. Labellum erect, about 8 lines long, three-lobed, the lateral ones reduced to small white teeth, one on either side of and embracing the base of the column; the basal spur short and broad, the sides of the middle lobe flatly folded back from the centre, and nearly against each other; disc-plates three, rosy-purple, their margins densely covered with flat white glands, giving a velvety appearance to the face of the lobe. Column short, thick, white at the base, the upper portion yellow. Anther-lid small. Pollen-masses oval, light-coloured.

Hab.: Near Samarai, W. E. Armit. The illustration is from a plant I brought from New Guinea in 1898, and now (March) flowering in the Botanic Gardens, Brisbane. The nearest ally of the present species is *D. paludosum*, Reichb. f., of India. *F. Manson Bailey, in "Queensland Agricultural Journal," April, 1900, plates clxxxvii. and clxxxviii.*

CYPRIPEDIUM × Y'MIR VAR. HALLII (C. ROTHSCHILDIANUM × C. HOOKERII VAR. VOLUTANUM).

American Gardening of October 13 last gives a full-page illustration of a stately-looking new *Cypripedium*, together with the following description:—

"This hybrid is one of the most attractive of those obtained from *C. Rothschildianum*. It was raised by F. Sander & Co., of St. Albans, England, blooming for the first time in August, 1900. Although the general ground colour of the flowers is greenish, they are sufficiently suffused with yellow to be brilliant. Unlike the *Rothschildianum* hybrids that have been obtained by using *C. Curtisii* and *C. ciliolare*, the flowers are delicate and graceful in outline, and more pleasing in colour. The variety here described is named in honour of John G. Hall. Foliage prettily reticulated, the leaves oblong; scape reddish-brown, pubescent, bearing three flowers; upper sepal broadly ovate, about 2 inches across, greenish, veins brownish-purple, only the outermost ones extending to the base, none extending to the apex; upper half rolled back; lower sepal similar in form, smaller; petals about 4 inches long, the margins sparingly ciliate, yellowish, tinged with brownish-purple at the apices, spotted for two-thirds of their length along the veins; labellum brownish-purple, swollen below, contracted above intermediate between the two parents; staminodium notched at the broad free end, tapering to the base (September 29, 1900). *(akes Ames.)*"

IRIS URMIENSIS.

A NEW *Oncocyclus* Iris (fig. 116), introduced by Messrs. Van Tubergen, of Haarlem, Holland, from the mountainous district near the lake Urmiah in north-west Persia, and first flowered by them in their nursery in May last. This very acceptable species is in its way quite as remarkable as the giant-flowered *Iris Gartsii*. In the flowers of the *Oncocyclus* group of Irises we hitherto have been only familiar with the subdued tones of grey, purple, or brown, mottled and splashed with often velvety black, but of the existence of a pure crimson-coloured *Oncocyclus* surely no one could ever have thought. It is the latter colour, deeper or lighter, according to the different varieties which the flowers of the *Iris urmiensis* have assumed. The usual central patch or signal on the lip is absent in this species, and a deep orange-coloured beard takes its place. The foliage is of the usual *Oncocyclus* type, narrow and falcate, the plant growing to the height of the well-known *Iris iberica*, the rhizomes also being of about the same size. The flowers are more or less sweetly scented, another remarkable feature in the flowers of an *Oncocyclus* Iris which are almost invariably without fragrance. The name *urmiensis* has been given to it with the approval of Sir Michael Foster, to whom flowering specimens were submitted in May last, and from whom the full scientific description may soon be expected to appear in these pages. *John Hoog, Haarlem, Holland.*

CHRYSANTHEMUM NOTES.

CHRYSANTHEMUMS IN FRANCE.—On my way to the Paris Chrysanthemum Show, I broke the journey at Calais for the purpose of going off the main line to a place called Bailleul, to see the recently erected horticultural establishment founded by Mr. Anatole Cordonnier. When I first made this gentleman's acquaintance, thirteen years ago, he was but an amateur, and I paid a visit to his place in Roubaix in 1889. Since then what changes! What an enormous development involving immense thought, and almost unlimited expense.

M. ANATOLE CORDONNIER.

My prime object being to see Chrysanthemums, I do not intend to weary the reader with dry

statistics concerning this horticultural factory, for that is precisely what it is. It must therefore suffice to say that it consists of fourteen large Vine and Peach-houses, 180 mètres long by 8½ mètres wide. Two huge glass structures, 80 mètres long by 18 mètres in width and 6 mètres high. Then there are ten Peach-houses 40 mètres long, and thirteen small greenhouses filled with upwards of 100,000 Palms, Araucarias, &c. The area is about 35 acres, and so far as its purpose goes, there is nothing equal to it in France. A light railway, with trucks drawn by dogs, is laid down for convenience of transport, and the whole of the buildings, stores, offices and warehouses are lighted with electricity, including the greenhouses and potting-sheds. For the purpose of heating, 120 truck-loads of coal were used last year, and the staff of workers consists of about 100 men and women. The products are Plums in June, and Cherries in the months of March and April. This year 107,500 Peaches were grown under glass, and a crop of 50 tons of Grapes, the principal varieties being



FIG. 116.—IRIS URMIENSIS. (Color.)

Black Alicante, Gros Colman, Black Hamburg, Foster's Seedling, and Canon Hall Muscat, &c.

Mr. Cordonnier is also the inventor of two manures—one for fruit being called "Grapperies," the other for flowers being known as "Papillon."

On arriving at Bailleul Station, the traveller finds himself in a quaint, old-fashioned little town, such as may be found in many of the provinces in France. The Grapperies du Nord, by which the establishment is known, lies but a few minutes' walk up the street leading from the station, and once there the visitor has certainly something to accomplish before attempting to catch his train back.

Chrysanthemums were the order of the day, although Dahlias were still in full flower, and many other interesting subjects; but time was limited, and the task of inspecting upwards of 40,000 pots of Chrysanthemums, all specimen plants, each bearing from three to five large exhibition blooms, was not a light one, and had to be accomplished within a limited time. Most of the varieties are grown for the Paris market, and are cut with long stems of 2 or 3 feet at least. For this purpose only

those kinds that lend themselves to the object in view are employed, the number of varieties being about 250. The plants are housed in the two largest vineries in long rows in batches, not in the formal sloping banks as we generally see them here in England at the trade growers and importers. One of the most popular is Mrs. C. Harman Payne, pale silvery-mauve, of which there was an immense number of monstrous blooms. Another favourite is Madame Thérèse Mazuyer, a very large white Japanese, with medium sized grooved florets; Madame Louis Rémy, the white sport; and M. Louis Rémy, the fine golden-yellow sport from Mrs. C. Harman Payne, are in splendid form, and largely grown. Other big blooms are found in President Nonin, Madame Gustave Henry, and Duke of York. One of the prettiest was the pinkish-rose M. B. Verlot. A huge batch of gigantic golden-yellow Phœbus was a dazzling sight. Heroine d'Orleans is not much grown in England, but in France it seems to be one of the most popular whites. Very grand was a mass of N. C. S. Jubilee, whose noble, solid-looking, incurved, silvery-pink blooms, formed quite a striking feature of the display. Other varieties used for this purpose appear to be Mrs. C. Orchard, Royal Sovereign, Mrs. Dr. Ward, Elaine, M. Chenon de Leché, whose wonderful mingling of soft salmon-rose and gold was delightfully effective; Beauty of Teignmouth, Vivian Morel, extra large; the new yellow François Pilon, Mrs. White Popham, and several others.

Large specimen plants, freely flowered in pots, are also grown in good numbers, and made a fine display. Most of them carry from twenty-five to fifty large-sized blooms on a plant, the varieties mostly employed for this purpose being Elaine, yellow; Mme. Louis Rémy, Mme. Gustave Henry, and Princesse Bessaraba de Braucovan, in whites; M. B. Verlot, pink; M. Louis Rémy, yellow; Mme. Geraud, blush; Souvenir de Suzanne, J. Lightfoot, H. Martinet, Mrs. C. Harman Payne, and one or two good standard sorts of good repute.

The other large greenhouse contained many plants of the varieties already named, but we noticed in addition to those Mme. F. Daupias, a fine golden-yellow; Le Grand Dragon, Oceana, Zephores, in the same colour; and Charles Davis, beautiful in colour; Lady Hanham, Mrs. Coombes, Madame Robert de Massy, a grand purple; and Lionel Humphreys.

M. AUGUSTE NONIN.

On the following day I reached Paris after an all-night journey, but knowing that preparations for the great international show were being made, I hastened to the other side of the city to Chatillon-sous-Bagneux, where the somewhat promising new raiser, M. Auguste Nonin lives, and whom I visited when in Paris last year. Here was to be seen a very large collection of unnamed seedlings in various stages of their existence, many of them under trial for the first and second year, and many of them promising to become formidable rivals to older sorts. From what I saw there last year there seems to be good ground for supposing that M. Nonin's seedlings will before long make their way on the exhibition tables of our English shows. Besides the unnamed seedlings, there was a very comprehensive collection from all sources of everything newest and best in Chrysanthemums. Some of those raised by M. Nonin during the past two or three years have already been put into commerce, and are beginning to be known and appreciated by English growers; Madame Gabrielle Debie, M. Frederic Darpas, Emile Nonin, Amateur Sechaplais, Frederic Bauer, Princesse Alice de Monaco, being some of the best.

There are, however, others equally promising. Figaro is a large spreading Japanese, with flat florets of a bright red-crimson colour, with a deep golden reverse; Souvenir de Madame Bellerand is a big one of the Prefet Robert type; Madame Geo. Mazuyer, a fine pale purple-rose; M. Jacob Holtzer, a big golden-yellow, with long drooping

florets, curly at the tips; Leopold Clerc, a fine golden-amber; Madame Camille Blanc, a clear buttery-yellow, very fine and distinct; M. A. Charvet, a deep velvety crimson, with gold reverse. Several others which are to be distributed next season, and worthy of note, are Ceres, Auguste Leroy, Dr. Hondrevux, Paris 1900, Emile Deseine.

THE PARIS SHOW.

At the Paris show novelties were in abundance. Many, however, were not shown in proper form, and their merits could not be properly appraised. The best lot were unquestionably those staged by M. Ernest Calvat, who had a very fine exhibit in vases, several blooms of each sort, being presented in a condition not equalled by any other exhibitor of his own nationality. Of these, Roi Soleil was a fine large golden-yellow; Croix du Sud, an immense white Japanese; Paver Radailli, curious in colour, being a mingling of pink and mauve, the blooms very large and globular; Brinchila, large Japanese with a peculiar whorl, centre of dull purple-amaranth; Regina, an immense white. Jungfrau, M. Waldeck Rousseau, Chais, Brumaire Uraine, Etoile du Nord, Lona, are all worth looking out for next season; but the best in the whole collection was undoubtedly Calvat's Sun, a grand large yellow of fine proportions, and great purity of tint. This alone was well worthy of the great raiser's reputation.

If any evidence were required of the activity and enterprise of the National Chrysanthemum Society, we should certainly feel disposed to point to the very fine exhibit of Chrysanthemums that it staged at the recent Paris Chrysanthemum Show. No other Society specially devoted to a particular flower has ever undertaken the task of exhibiting on the continent in a collective capacity, but this is not the first time that the National Chrysanthemum Society has done so. The collection was supplied by various members, it numbered in the aggregate about 300 varieties, and included every type of the flower, from the single flowering to the most gigantic of the Japanese. The display was very artistically arranged by Messrs. Waterer, Bevan, and Whitby, with the result that it was much admired by the visitors, and the jury who awarded it a 1st prize. Three First-class Certificates were also awarded to novelties in the exhibit.

COLONIAL CHRYSANTHEMUMS.

Last season there was every promise of something like rivalry between our colonial raisers and those nearer home. This has certainly been realised this autumn, for at several of our leading trade growers and importers the colonial seedlings have been very much to the front. Mr. W. Wells, of Earlswood, has an interesting collection of seedlings raised by Mr. T. Pockett, of Melbourne, some of the more modern of which are destined to occupy an important place at English exhibitions. Charles Longley, Matthew Smith, Ernest Betsworth, C. J. Salter, Miss Ida Barwood, Sir George White, Mrs. A. M. Redhead, Millicent Richardson, Mermaid, and several others appear to be the most striking from this source. At Swanley, Messrs. Hy. Cannell & Sons have also a large number of Australian seedlings, chiefly the product of Messrs. Brunning & Kerslake. Without specially describing them, it may be useful to mention that some of the best of these appear to be Sydney Brunning, a fine crimson and gold; Mrs. Frank Gray Smith, golden-bronze; Admiral, white; Hector Brunning, Australian Monarch, Marjory, Sir H. H. Kitchener, Mrs. F. A. Constable, &c. *C. Horman Payne.*

CHRYSANTHEMUMS FLOWERING IN OCTOBER

brighten the borders of herbaceous perennials after the usual occupants have ceased to flower. They may either be grown in pots during the summer, in readiness for planting at the end of September; or they may be planted in the reserve garden, and transplanted at the end of September; or they may be planted in the herbaceous border in April, and encouraged to make strong growth in the position in which they will flower. I prefer the last

method where the border is large enough to admit of it, but whichever method is adopted they should be planted in good sized clumps, each colour being kept separate. They will flower for two seasons without renewal, if the ground is manured well before they are planted; but the best results are obtained by lifting a few old plants as soon as flowering is over, wintering them in cold frames, and taking cuttings from them in March, which is quite soon enough for production of strong plants for the autumn. After trying more than seventy varieties, I have selected thirty, viz., Ryecroft Glory, Roi des Précoces, Arthur Crepy, S. Barlow, Alex. Dufour, dark claret; Mrs. Hawkins, yellow; Martinmas, pink; Madame la Comtesse de Cariel; Madame Charvin, dark salmon with yellow tips; Gloire de Mezzin, reddish-brown; Michett White; Coral Queen, reddish-salmon; H. Yvon, yellow and pink, large full flower; Rose Queen, rosy-lilac, large; Harvest Home; Gen. Hawkes, dark claret; Précocité, red, small and late, very useful; Fiberta, clear yellow, Pompon; these, and a few other varieties are also grown for cutting purposes on a west border 150 feet long and 12 feet wide, where they can be protected on frosty nights with canvas; thus treated they give us flowers in abundance for decorative purposes, until the third week in November. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

NARCISSUS IN GRASS.

Turf is the natural habitat of many species of Narcissus, and consequently many thrive much better in grass than in the ordinary garden border or bed. Some, like the English Lent Lily (*N. Pseudo-Narcissus*) actually deteriorate in garden soil, while in grass they thrive and multiply both by division and seeding. Among those which are recommended for grass, the following representative species may be mentioned:—The common Daffodil, the Narcissus poeticus of gardens (Pheasant's-eye) and of the Pyrenees; *N. moschatos* of Haworth, a fine snowy-white Daffodil; *N. princeps*, *N. cyclamineus*, a very charming Liliputian; Achilles and abscessus, both with rich deep yellow trumpet, and paler perianth; *spurius*, a self-yellow; *scoticus* and *variiformis*, both with white perianth, and large expanded yellow trumpet; and *pallidus*, *præcox*, and *albicans*, almost white trumpet Daffodils. This list may of course, be much extended, if space allows; but the above are recommended as the most desirable from a knowledge of their constitutions.

Generally speaking, it is not desirable to plant them on made lawns which are regularly mown. There is generally not such a depth of loam as on natural meadow-land, and what there is, is not rendered so light and porous by a mass of fibrous roots which have been accumulating during successive generations under the natural turf. Besides this, Narcissus spoil the look of the lawn when they are off bloom, as the grass cannot be cut till the middle of May, and then the lawn is left very bare and brown. In an orchard, on the contrary, the leaves are no disfigurement—scarcely noticeable in fact; and by the time the hay is cut, they have quite died down.

In planting Narcissus in grass, some advocate scattering the bulbs with the hand on the grass, and then planting them where they fall. Others recommend planting in large groups, with a good space between the individual bulbs, as each bulb will become a clump of eight or ten in as many years, beside the seedlings scattered about. The object should be to plant so that they look as much like being indigenous as possible. It is generally considered preferable to keep the three main groups separate—Trumpet, Star, and poeticus—so that Trumpet are not mixed with Star Narcissus, or poeticus with either. If the space is limited, and it is desired to have the three great classes represented, it is obvious the hand-sprinkling method will not do, and the best way then is to plant the bulbs inches to a foot apart in irregularly-shaped

groups, and then in a few years they will be fine bold masses.

As to the method of planting, if it is a regularly mown lawn, probably the best way is to take the turf right up, loosen the underlying soil, and then put the bulbs in. It is a laborious process, but on the lawn it is the only way of planting which is quite satisfactory. On pasture or meadow-land, however, the simpler way is to provide oneself with a long, stout iron-shod dibber, with a cross-bar for the foot, with which a good hole can be made anywhere. Equipped with this, a barrowload of light compost, two-thirds leaf-mould, and the desired bulbs, a large space can be planted in a comparatively short time. Having made a hole with the dibber, which will not fill up as in newly-dug ground, it should be filled with the compost, and the bulbs pressed down into it, and covered up. This does not take so long to do as to describe, when one gets used to it. It gives the bulbs a good start, so that they grow strongly the first year and increase, and then success is assured, unless the soil is very unsuitable indeed.

The advantages of this way of growing Narcissus over that of beds and borders are obvious. In the beds they have to be taken up in May, probably before they are ready, when, instead of increasing, they deteriorate; while in the borders, they either have to be taken up, as in beds, or else, if grown in any considerable quantity, they render it difficult to make the border look nice in the summer, besides making it very untidy in May. The method of putting the bulbs in so deep that the ground can be dug over them, is open to serious objection, as they have to spend so much strength in getting their leaves to the surface; all the solid substance of which, before they get above the surface, has to come out of the substance of the bulb, that they are weakened before the bloom develops, and this means that the vigour of the blossom is lessened, and many of the bulbs will not blossom the following year in consequence, as they need a season to recoup themselves after such an expenditure of energy as is involved in making leaves 6 or 8 inches long under the ground, and producing blossom, and probably seeds as well. *Alger Petts.*

HERBACEOUS PLANTS.

(Continued from p. 349.)

PROPAGATION.—There are two main methods by which hardy herbaceous plants may be propagated: by seed, and by division. The process of sowing is adopted with those plants which possess a tap-root, and which produce few or no lateral rooting offshoots, nor lower erect branches which are easily capable of being used for cuttings; plants which, in short, will neither divide nor strike. Propagation, in the case of such plants, is thus necessarily a longer and slower process, a year or more having usually to elapse before flowering individuals are obtained. This is, however, partly balanced by the fact that a far greater number of plants are produced all at once from one sowing, than would be the case from one operation of division. The plants raised from seed would also, in the long run, tend, for obvious reasons due to cross-fertilisation, to be more vigorous than those perpetually propagated by the purely vegetative process of division of the stool. So that even in the case of the caespitose, fibrous-rooted forms of hardy perennials, propagation by seed after the lapse of every few years, would, for the above reason, probably be found beneficial, if not absolutely necessary. Though there are striking exceptions, it is nevertheless the rule in Nature, that side by side with the vegetative, sexual reproduction inevitably and perpetually recurs. If the following is a case of one of the exceptions, I am not absolutely certain, but *Saponaria officinalis* exhibits, in some localities, a strong tendency to produce flowers which are partially double; another characteristic of this plant is its habit of producing exuberant and very

numerous stolons, which grow rapidly in all directions and for great distances underground, so that, as I can testify by experience, the plant may be a terrible nuisance in a garden border, over-running and trampling down other things which had been planted in its vicinity. I notice that the specimen in the herbaceous ground at Kew produces none but single flowers, and at the same time it does not appear to be at all troublesome in sending out more runners than are needed. So that possibly the doubling of the flowers in this interesting plant may be due to the fact that it is assuming, at least as a temporary expedient, a purely vegetative method of propagation; this, in turn, may be owing to the fact that, being an originally naturalised plant, and withal quite locally distributed in this country, the proper moths may not always be found to fertilise the flowers.

offspring thus formed by the severing of the internodes which bind them along the original runners to each other and the parent stock, he is carrying to a far greater and far more beneficial extreme the object which the plant, in producing these offshoots, has all along held, so to speak, in view, viz., the dispersal of its progeny as far away from itself, and over as wide and diversified an area of ground, as possible. Fresh conditions in the environment, such as a new soil and plenty of air and space, are those which vegetable vigour and evolution (by means of variation) imperatively demand. In botanic gardens, such as Kew, the classificatory arrangement of the herbaceous plants in their Natural Orders, necessitates that individual plants remain rooted in the self-same spot of ground often for a great number of years, some of those at Kew having been undisturbed for thirty or forty years.

lower temperature, the prevalence of winds, and the greater scarcity of food, it would, on the other hand, be freer from struggle and invasion by other forms of plant-life into their homes, and competition would be reduced to a minimum.
W. C. W.

(To be continued.)

PLANT NOTES.

KNIPHOFIA MACOWANI HYBRIDA.

WHILE it is notorious that certain plants are quickly influenced by cross fertilisation, it is equally true that others cannot be crossed, and, indeed, there is something near akin to this in the *Kniphofia Macowani*. The plant has been for some years in cultivation in this country; and it is a beautiful free-flowering species, earlier than many others. Seedlings have been raised from the typical species with, however, little or no variation. The original species, as is well known, differs from the majority of its race in having daintily reflexed segments of the perianth, which give the flower-spikes a distinct appearance. This variety, *K. M. hybrida*, possesses the same characteristic, but instead of being of an orange-tint, the flowers of the new comer are of a peculiar shade of red-scarlet. The plant is scarcely a hybrid, as the term is usually understood, but rather, I believe, a seedling variation that has occurred in a large batch of the original, and it differs only in colour. The plant originated at Mr. Amos Perry's nursery, Winchmore Hill, and in the hands of such an expert it will not be long before it comes into commerce.

STOKESIA CYANEA.

As it seems there are two forms of this plant, it may be worth while distinguishing the early-flowering or summer-flowering form by the addition of "*præcox*" to the specific name. It would appear that Mr. Thompson and Mr. A. Perry possess identical stocks of this plant, and naturally there are others who have the plants from both sources. At the same time, it would be helpful to those anxious to possess blue-flowering plants, to know they were purchasing a variety that would expand during bright and sunny weather, for as "*S. W. F.*" has thoughtfully stated, the frailty of the florets will not permit the ordinary kind to expand in damp weather. *E. H. Jenkins, Hamp' on Hill.*

CYPRIPEDIUM × "DORA CRAWSHAW."

THE subject of our illustration (fig. 117), was shown by Messrs. Charlesworth & Co., of Heaton, Bradford, at the meeting of the Royal Horticultural Society, on Tuesday, November 6, 1900, when it received a First-class Certificate. It is a fine, distinct-looking cross between *C. bellatulum* and *C. Charlesworthi mosaicum*. The lip bears a strong resemblance to that of the latter parent, as the fine substance of the whole flower is indicative of the former. The colour is a purplish-rose, over which are displayed lines and veins formed of small spots. It is a striking flower.

WEST INDIES.

OUR correspondent, Mr. Robert Thomson, writes to the *Times* in the following strain:—

"You have, in my opinion, done the most important thing that can be done to promote the welfare of our West India colonies; you have recently, in more than one leading article, most powerfully demonstrated what is most wanted in these colonies, namely, capital and fresh enterprise, in order to develop the varied latent resources of these valuable islands, islands which were once our great sugar plantation colonies, but now unhappily languishing in consequence of that staple industry having been paralysed.



FIG. 117.—CYPRIPEDIUM "DORA CRAWSHAW."

The caespitose habit of the fibrous-rooted perennials arises by the emission of very short-rooting branches all round the main axis of the plant. In those plants which cannot be termed caespitose the branches are longer, and may even, as in the Soapwort, form long runners. In the former case a dense mat or stool is formed all around the parent stem, or in one or two directions only. This large stool consists, in reality, of a whole colony of distinct plants, the majority of which are still united together by links (which are simply the internodes of the original runner-branches, while each individual plant consists of a node with its emitted roots and aerial shoot), at least for some time. In those species which produce runners with longer internodes, the individual colonists, of course, travel further away from the parent stem, spreading themselves over a far wider area in a given space of time.

What the gardener does, therefore, in "dividing" his plants, is simply this: that, in separating the

This, I think, affords ample reason to account for the fact that in such places as botanic gardens many plants fail to attain that vigour and healthy appearance which they do elsewhere. Merely manuring the plants from year to year appears to be quite inadequate; they need a complete change of soil, just as human beings need at intervals a complete change of scene and air in order to maintain themselves in health. Plants are not mere automata, but living beings, and are likely to be adversely affected by monotonous surroundings.

There is a certain class of perennial herbaceous plants which, in past ages of the earth, have been forced, by dint of severe competition by their fellows of the plains, to seek habitats far removed from the scene of their severe struggles for existence, and hence have come to adapt themselves to an alpine life, a life that is among barren rocks, and even amidst the snow high up on mountains or in far northern climes. In such regions, while life would be harder in some ways, owing to the

"Coupled with the advent of the resuscitated progress so much desired in these colonies, for which you have so eloquently pleaded, you have directed attention to another important aspect presented by these colonies, one which is peculiarly conducive to their general amelioration, one which is calculated to furnish the necessary impetus to set on foot many new enterprises, as well as develop those already in operation. I refer to the concluding words of your leading article, dated November 8, which are so interesting that I hope you will allow me to reproduce them:—

"But the pending establishment of a new and fast direct service to Jamaica, to which we have already called attention (*vide The Times*, Oct. 13), will doubtless offer an attraction to some of the more adventurous of our winter migrants. If it does, it seems not unlikely that, sooner or later, Jamaica and the other British Antilles will, to their own great advantage and ours, prove at least a pleasing alternative, if not a formidable rival, to Egypt and the Riviera."

"In conclusion I may add, that having been head of the Jamaica Botanical Department for many years, I can state, with confidence, that for large or small investors, backed by personal enterprise, a splendid and lucrative opportunity is afforded. *Robert Thomson.*"

NOTICES OF BOOKS.

THE LOCUST PLAGUE AND ITS SUPPRESSION. By Æneas Munro. (John Murray.)

THIS is a volume of 365 pages, devoted to the discussion of the natural history of the locust, the extent of its ravages, and the means of combating the plague. It is useful to have the information on these subjects comprised within one volume, but bearing in mind the numerous papers issued by the Entomological Department at Washington, Dr. Munro's claim to be first in the field must be accepted with considerable reserve. Dr. Munro has had personal experience of the pest in the Argentine Republic as well as in South Africa, and he computes that the pecuniary loss entailed in one visitation is greater than that incurred in the Transvaal war.

The plan he advocates for their destruction is the employment of rollers on soil previously prepared. In Cyprus the locusts were trapped in deep pits lined on one side with polished zinc. In 1883-84 it is computed that 250,000,000 locusts were thus destroyed at a cost of 2s. the million. In Africa, similar success might be compassed by co-operative effort and judicious expenditure on the part of the Government. Dr. Munro's book is put together for purposes of reference, it is well illustrated, and has a good index; but Dr. Munro would have effected his aim more surely and quickly had he exercised considerably more condensation. A great deal of the correspondence, which is given at length, might well have been omitted altogether, or at least summarised.

AN INTRODUCTION TO VEGETABLE PHYSIOLOGY. By J. Reynolds Green, Sc.D., &c. (J. & A. Churchill, 8vo, pp. 459.)

IN this volume Prof. Green deals with the plant as a living structure, following out its own destiny, but influencing and being influenced by other living creatures, and by that aggregate of circumstances which it is the fashion now to speak of as "the environment." The structure of the plant is briefly described, and the relations of the tissues to the work they have to do explained. Such work include the absorption and transmission of water and of gases, the imbibition of food-producing material, the action of light on chlorophyll, the formation and transfer of food materials, the storage of reserve materials, their digestion by means of enzymes. The phenomena of growth as consequent upon the operations just referred to, and the accompaniments of growth as manifested by stimulation and nervous

action, are dealt with in certain chapters, whilst the details concerning reproduction, furnish the substance of others. Dr. Green lays stress upon the fact that the absorption of food by plants is not really different from what is seen in animals, and that being so, one more of the alleged differences between plants and animals disappears. In fact, a plant does not absorb food any more than an animal does. What it does is, to take up substances which are converted into food in the tissues of the plant under the influence of light and heat, and the action of enzymes or ferments. And, so, although a plant has no definite nervous system, its protoplasm fulfils the functions of a nerve-cell—it is sensitive to stimulus, and it transmits to a distance the result of the stimulation.

Dr. Green may be congratulated on having produced one of the best text books on the subject of vegetable physiology, clear, coherent, and accurate. In a subject so unstable, and to which every week is adding something of importance, this comment is all the more forcible.

DIE BEERENSTRÄUCHER.*

THIS small work on bush fruits shows unquestioned research in its own line, and is practically a re-issue of a similar one, by the same author, that appeared in 1867. The present work is edited by Dr. Udo Dammer, and is one of the series of the *Gartenbau Bibliothek* (Horticultural Library), published by Karl Siegmund, Berlin. The text is furnished with fourteen illustrations of Gooseberries, Currants, Raspberries, Blackberries, Cranberries, and methods of training applicable to some of these fruits. Acknowledging the great importance of these fruits from the farming and gardening points of view, the author rightly insists on the proper preparation of the ground, and suitable cultivation.

The more extensive cultivation of these fruits is recommended to his countrymen, and this is more especially enforced in those parts of Germany of which the climate is too cool in summer to admit of Grapes ripening their fruit out-of-doors sufficiently to make a drinkable wine. For the garden cultivation of Gooseberries, the espalier, the cordon, and the pyramid are forms recommended; and directions for forming these are given in each case, together with the names of suitable varieties for these and other purposes, the majority being of British origin, Whinham's Industry figuring as *Rothe Triump*, and our old friend *Roaring Lion* as *Rothe Preisbeere*, and so on. A good feature is the description of the culinary uses for which some of the varieties are best fitted, a matter that never receives any attention in our lists. Among hairy reds, no mention is made of the Warrington, a serious omission, as we should take it. Directions are given for making wine from the fruit. The chapter on Black and Red Currants treats of these fruits in a similar manner; but in the list of insect enemies, no mention is made of the Currant-bud mite, from which we may infer that it is at present unknown in Eastern Germany. The difference between early and late flowering Currants is about fourteen days; and where late frosts are of common occurrence, the following varieties should not be planted, Red and White Versailles, Caucasian, Dutch White, Belle de St. Gilles, Fay's Prolific, Bright Red Early, White von Bar-le-Duc, Lee's Black, and Black Grape; on the contrary, late bloomers, such as Dutch Red, Red Long Bunch, Houghton Castle, and Seedless. Of Raspberries named for field culture, we note Knevet's Giant and Fastolf; and Colonel Wilder is given as a fine yellow fruiter, and Billiard's Everbearing as a double or autumnal fruiting variety.

The book will be found of use by those able to understand the German language.

MR. MCLEOD, the General Superintendent of the Edinburgh streets and parks, is, we are sorry to hear, retiring from the post he has occupied for a quarter of a century, on account of ill-health.

* An octavo volume, consisting of 108 pp., by Herrn L. Maurer, Archducal Garden Inspector at Jena.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Laelia anceps and its varieties have succeeded unusually well here this season, and this is due in a great measure to the very bright summer and autumn of last year. The long scapes have reached their limit, and soon the flower-buds will commence to develop. Draw a moist sponge carefully up each spike to clean them from dirt, and free the bracts from a glutinous substance generally present. The plants will continue to need all the light possible, and in smoky districts the roof-glass should be frequently washed. Afford but little water, remembering however that until the flowers have expanded, the material should not be allowed to remain dry so long as afterwards, when a very decided rest will be necessary. The flowers are very liable to injury from town fogs.

Laelia autumnalis, &c., should be subjected to severe drought as soon as the flowers have expanded, no water being necessary so long as the young pseudo-bulbs remain firm. Mealy-bug may secrete itself among the basal bracts, and if allowed to remain will do much harm. Like other Mexican *Laelias*, *L. autumnalis* requires a free, buoyant atmosphere at all times. *L. albida*, now developing its long flower-spikes, will require little water to keep the pseudo-bulbs sound. These two species will thrive in a temperature rather less warm than that which *L. anceps* requires, but practically nearly all Mexican *Laelias* may be grown together. The pretty *L. rubescens* has just finished growing, and will now proceed to develop its flower-spikes, needing therefore less water.

Cattleyas Trianae and *Percivaliana*.—Plants showing flower-buds in the sheaths should be afforded water more liberally until the flowers have expanded, but directly afterwards conditions that have lately obtained should be revived. The benefit from removing the flowers soon after they have developed from valuable plants, cannot be too often urged.

Grammangis Ellisii, and its allies the Malayan *Grammatophyllum*, are cultivated in a limited number of collections. This Madagascan species, however, is well worth a place where room can be spared, for, given favourable conditions, the flowers produced are highly attractive. It requires a very hot, moist, and moderately shady spot to grow in, but when its square-shaped bulbs have attained their limit, drier and cooler conditions should follow. The plants should be placed near to the glass, where all possible light may act upon and solidify the bulbous tissue. The leaves usually fall away during the winter, and if given a very decided rest, the flower-spikes should emerge from the next season's young growth, in a similar manner as in *Chysis bracteescens*. From mid-winter until the spikes appear, no water should be afforded. With the exception of the gigantic *Grammatophyllum speciosum*, the members of this genus thrive best grown in suspended baskets, and at this season require similar treatment to *G. Ellisii*.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park New Barnet.

Planting Fruit Trees and Bushes.—Owing to continual rain, planting has been hindered or altogether stopped, and in some places several weeks will elapse before operations can be resumed. As autumn planting is most to be recommended, those having soils to deal with which dry quickly after rain, should put energy into the work, and finish it before real winter weather sets in.

Pruning.—The pruning of Morello Cherries being brought to an end, Plums may be taken in hand. The young trees, if they were properly disbudded and pruned in the summer months, will only need to have the chief shoots cut back somewhat, and a little thinning done to the young shoots that must be laid in for the extension of the trees. Trees which have filled the space allotted to them should have the spurs cut back, particularly those which point outwards from the wall, even if by so doing a few bloom-buds have to be sacrificed. Long spurs should be cut back to within 1 inch of their bases. If the tree is a bad example, remove one half of the spurs, and the remainder next winter.

Something may be done in this direction after the fruits have been gathered. The wounds heal so quickly, and the dormant buds situated on the stumps become prominent and more fitted to start in the spring than is the case with cut back spurs at this season. Crowded spurs should be lessened in number by cutting out entirely some of those that are the most crowded. If much of this sort of pruning is done, the surface roots should be laid bare and top-dressed with maiden loam, bone-meal, and lime-rubble. The trees, as soon as the pruning is finished, should be washed with soda and hot water, and then dressed with an insecticide. Dessert Cherries are very impatient of the knife, and if much pruning is done in the winter, gumming is sure to occur, which may result in the loss of a branch or of a large portion of the tree. The remedy for this is summer pinching, which is sufficient to keep all shoots within bounds, so that nothing more than the shortening back of over-lengthy spurs and shoots is called for now. When the growth on dessert Cherries is excessive, it shows that the trees ought to be lifted, either wholly or in part, and be replanted with a considerable quantity of chalk or lime-rubble mixed with the staple. Young trees which have much wall space to cover, should have as many shoots laid-in as the method of training adopted requires; and in topping or shortening these shoots as the case may demand, be careful to cut to a strong wood-bud.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Hereford, Abbotsbury Castle, Dorsetshire.

The Planting of Evergreen Shrubs, &c.—Planting of shrubs of this kind should be carried out before any severe frosts occur, choosing a time when the soil can be trodden upon without sticking to the boots or tools. The ground to be planted should have been well dug and manured. When planting, have at hand an ample supply of fine refuse soil from the potting-shed, or partly-decayed leaf-mould. These soils are of a great use in filling in the interstices among masses of fine roots, helping to hold the plants firmly in the soil, and to re-establish them quickly. The topmost roots should be covered with soil to the depth of 3 to 4 inches, and mounded over around the stem twice as high as this, the soil being made level or basin-shaped in the late spring. Before filling in a hole with the full quantity of soil, raise the plant a few inches and give it one or two vigorous shakes so as to settle the soil about the roots, then afford water; till in the rest of the earth, and mulch with short strawy manure.

The Drainage from Walks and Carriage Drives.—The leaves having fallen from the trees it becomes necessary to examine the grating-sinks and catch-pits from time to time so as to prevent as much as may be the rain from making furrows in the gravel. Let paths and drives be swept, and worms and their castings collected.

PLANTS UNDER GLASS.

By T. EDWARDS, Plant Foreman, Royal Gardens, Frogmore.

The Conservatory.—The application of water to the plants should at this season be made in the early morning hours, as every care is now necessary to protect the flowers of Chrysanthemums from damp; and with that object in view the floors and staging should be rendered dry by mopping up water and applying gentle heat at the same time that the side-ventilators are opened a little space. Maintain a night temperature of 45°, which is high enough for all the different kinds of plants now placed in this house. When Chrysanthemum-blossoms are at their best, the correct naming should receive attention, and notes taken of varieties most suitable for different purposes, which should be discarded or may be increased in numbers another year. In a large collection, all cultivated exactly alike, certain varieties continue in a fresh condition much longer than others, and this is a matter each can decide for himself, being guided to some extent by home requirements. Cuttings should be made and put in the cutting-pots before they become drawn on the mother plants, which is an evil that cannot be avoided when plants are grouped in masses together. Provided the cuttings are in a fit state to be taken, the earlier they are put in the better for growing plants for the production of large blossoms, either Japanese or incurved. Much labour and a great deal of storage

space will be saved if the plants, when past flowering, can be cleared right away, and the pots emptied and stored. If green or black fly make its appearance, sprinkle the shoots with tobacco-powder.

Stores.—Plants of Euphorbia (Poinsettia) having their bracts of full size should be kept in a rather dry atmosphere for the present; and some of the plants may be used in the warmer parts of the intermediate show-house, applying only sufficient water to these as will prevent the leaves from flagging. With the fire-heat now necessary, insects will increase in number, calling for much care in the case of young plants of Dracenas and others with ornamental foliage, whose leaves should be sprayed with water in which 2 to 3 ozs. of soft-soap per gallon is mixed.

Bulbs.—Those which were potted early, if well rooted, may be removed to cold pits and shaded till such time as the leaves have become green. When required to flower, remove them to an intermediate heat before placing them in the forcing-house. Sudden changes from cold to too great heat often end in failure in the case of bulbs and hardy plants generally. To succeed, the Dutch bulbs, corms of Gladiolus Colvillei (The Bride) should now be potted in rich, light, sandy soil, placing ten or twelve bulbs in an 8-inch pot, covering them with about 2 inches of soil, and placing the pots where they can be protected from frost. The dwarf spotted varieties are equally suitable for growing in pots; these will be found more useful if six corms be set in 6 inch pots. Pot Lilium longiflorum Harrisii for late spring-flowering, and place under plunging material outside until they are well rooted.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

Peaches and Nectarines.—The trees in the earliest house, the forcing of which will begin in the first week of December, should be pruned and trained forthwith. Until the trees are started, let the house be kept cool and damp, and if scale is present on the trees, syringe them twice or thrice with very weak petroleum emulsion. Keep the border steadily moist, and avoid the mistake of affording a heavy application of water to it just as forcing begins. Let no time be lost in getting the pruning and tying of the trees in the succession Peach-houses finished as soon as circumstances allow. Before fastening the trees, the chief branches should be scrubbed with water and soft-soap, even if the trees are free from insect pests; but where scale exists, every part of the tree should be carefully cleansed with a brush, and dressed with a liquid preparation of concentrated alkali. The trees should be closely examined once, about three months after starting them, and if any scale-insects are discovered, syringing with nicotine a few times will keep them in check until the fruit is ripe. All manure-tanks should be cleared of their contents at this season, and the liquid portion applied to the Peach-tree borders, having previously broken up the surface. The quantity applied should be sufficient to reach every part of the border, and to make doubly sure that this is done, holes should be made with a crow-bar to the depth of 1 or more feet. When sufficiently watered, rake the surface over, and apply a slight mulch of short dung. Poverty of the soil of a Peach-border conduces to buds falling, but where the soil is enriched the trees flower strongly, and the young fruits swell away freely, and the foliage assumes the dark green colour of perfect health.

Figs in Pot.—The bushes that have been specially prepared for early forcing should now have the hot-beds of tree-leaves prepared for their reception; a moderate amount of bottom-heat being essential to success with early Figs; and a low, efficiently-heated pit is preferable to a dry and lofty house. The heating apparatus should be capable of maintaining a temperature of 65° in the severest weather without unduly heating the pipes, &c. Trees for early work should be of moderate size, have short-jointed, and well-ripened growths, which are covered with embryo fruit; and the plants should also be well-established. Having plants of this sort, forcing may begin in the last week of the present month. The leaf-beds should be made 3 feet deep, and consist of the leaves of the Oak; the beds should be raised so as to bring the plants to within about 1 foot of the roof. Let the pots

stand on the surface of the beds until the heat subsides to 65° or 70°, when they may be plunged to the rims. Maintain a top-heat of not more than 50° at night and 55° by day, until the fruits have reached the size of Filberts. After this stage, sudden falls in the temperature must be guarded against. In Fig forcing, the chief point is not to induce too much leaf-growth before the young Figs are firmly established and swelling freely.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Peas.—For the earliest crop of Peas sowing should now be made, unless the grower has space in which to raise the plants from seed sown in pots early in the month of February. The indoor method is the safer, out-of-door sowings depending on the nature of the winter and of the soil, and the locality more, perhaps, than anything else. Given a rich and rather retentive soil, and the warmest spot in the garden, a good sowing may be made before the end of the present month. Sutton's Ringleader is a very trustworthy variety in most kinds of soil. Sowings are made sometimes at the end of the month of October, but should the plants grow rankly, frosts are likely to cut them up considerably. Generally speaking, Peas in light soils afford the best crops, growth being sturdy, and able the better to withstand hard frost. Early Peas having mostly short haulm, may stand pretty close, and the drills if drawn at 3 feet apart, are sufficient for most varieties. The seed should be sown more thickly than in the summer. Cover them with 3 inches of finely-sifted leaf-mould or potting-bench refuse, or return the staple to the drills. In hard weather some kind of protection should be afforded, and if the plants have come up thickly, thin out to 1½ to 2 inches apart after the chief danger from frost is past. Traps should be set for mice, and slugs and shell snails sought for continuously. If sparrows peck the leaves, run some black thread along the rows about 6 inches above the plants.

Broad Beans.—I have already mentioned the superiority of Beans raised under glass early in the new year to those sown in the open, but where no conveniences exist in which to raise the plants, one or two sowings should be made, as advised for early Peas. It does not much matter how thickly the seeds are planted, as the seedlings are the better for being transplanted in February or March. Beck's Early Green Gem and Mazagan are good varieties for present sowing.

Witloof.—The roots should now be lifted and stored in damp sand under cover. If any of the roots are left in the ground, cover them with litter, so as to keep the soil from freezing.

Cabbage.—The mildness of the weather and the rainfall will have caused the earliest sowing to make rapid growth, and later sowings are not advancing; let the earliest plants be half-raised out of the soil with a fork, then press the soil round them again firmly.

Spinach.—Let the land be well hoed in all plantations. The earliest sowings may be moulded up. Slugs have been particularly troublesome in this garden, and dressings of fresh soot and slaked lime have had to be frequently used.

General Work.—Prepare Pea and Bean sticks, tying them in bundles of assorted lengths. If wireworm is present in the garden, sprinkle the land with gas-lime, the rains washing it into the soil, and as it will be some time before the land is occupied again there need be no fear of injury to any vegetables. Continue to get in all the manure required, also bracken, wherewith to protect Celery and salads in the open. Cold frames containing Lettuce and Cauliflower plants should be banked up with litter and soil, and the soil inside well stirred with the hoe, and lightly sprinkled with soot. Mats should be got in readiness for use in frosty weather.

TRADE NOTICE.

M. PELO J. ANASTASSIADES, proprietor, with Mr. H. Gansler as general manager, desires us to inform our readers that he has established a florist's shop and nursery garden at Smyrna, under the title of "Maison au Tréfle" (Shamrock House), and that the exportation of bulbs will be his chief specialty.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

SALES FOR THE ENSUING WEEK.

MONDAY to FRIDAY, Nov. 26 to 30.—Dutch Bulbs at Protheroe & Morris' Rooms.

MONDAY, Nov. 26.—Special Sale of Perennials, Lilliums, Hardy Bulbs, &c., at Protheroe & Morris' Rooms.

WEDNESDAY, Nov. 28.—Great Clearance Sale of 116,000 Fruit Trees, at Perry Hill, Cliffe, near Rochester, by order of Messrs. W. Horne & Sons, by Protheroe & Morris, at 11.30 o'clock.

THURSDAY, Nov. 29.—Important Sale of 90,000 Fruit Trees and 4,000 Roses, at the Grove Park Nurseries, Burlington Lane, Chiswick, by order of Mr. John Smith.

FRIDAY, Nov. 30.—Imported and Established Orchids, at Protheroe & Morris' Room.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—41°.

ACTUAL TEMPERATURES:—

LONDON.—November 21 (6 P.M.): Max. 47°; Min. 42°.

November 22.—Dull.

PROVINCES.—November 21 (6 P.M.): Max. 47°; Eastern Counties; Min., 39°, N.E. Scotland.

Blanching
Endive.

FEW persons who depend on the shops for their supply of Endive for salads, ever get it in the best condition, the produce being sent into the towns by the growers when only partially blanched, and therefore tough and decidedly indigestible by ordinary mortals. A week or ten days would make all the difference in this matter, and we incline to the belief that the market gardener would be no loser if he were in less haste to send his Endive to market; in fact, the purchaser would willingly pay a trifle more for well-blanching heads. Whilst mild, or but slightly frosty weather prevails, Endive is readily blanched by gathering up the whole of the leaves and binding them pretty firmly together with a strand of bast, and in the case of the taller broad-leaved Batavian varieties with two strands. If wet weather ensue when the crop, or a part of it, is fully blanched, rotting is soon induced, one of the disadvantages of the bundling-up method that cannot be got over excepting by pulling up the plants and replanting them in frames, and affording them air freely.

There is a method of blanching which a few gardeners in private places practice in the autumn and early winter months, but which is seldom practiced on Endive in frames later in the year, for what reasons we do not know; we refer to the placing of pieces of tiles or slates over them, of an inch or less in size than the plants to be blanched, first spreading out the leaves radially.

The protruding leaf-tips form a green border to the white heart that has an appetising look. The time taken to blanch is about twenty-one days, and no rotting ever takes place; moreover, the tile, &c., is a protection against slight frosts.

THE frequency with which various crops are attacked by fungus parasites, even after special precautions have been taken to guard against them, has led to the firm conviction on the part of many growers that in such instances the fungus was present in the seed at the time

of sowing. This idea is also entertained by Professor ERIKSSON, Director of the Experiment Station of the Royal Swedish Academy of Agriculture, who has paid much attention to the rusts of cereals. ERIKSSON considers that the spores of rust producing fungi are not present in sufficient abundance to account for the frequent severe epidemic of rust which shows itself on Wheat and other cereals about four to five weeks after sowing. To account for this condition of things, ERIKSSON assumes that the fungus is present in the seed in a subtle form, which he terms mycoplasma—in other words, the protoplasm of the fungus is supposed to be present along with the protoplasm of the grain of corn, and in this condition it grows up with the young plant for about five weeks, when, if conditions are favourable, the protoplasm of the fungus assumes the form of fungus mycelium in the leaves of the young plant, and within a short time produces clusters of rust-coloured fungus spores, which rupture the tissues of the leaf and lie free on the surface. Many of these spores are deposited by wind or rain on adjoining leaves, where they soon germinate if the surface of the leaf is damp, enter its tissues, and give origin to other clusters of spores, which are in turn dispersed, and add to the spread of the disease.

Thus it will be seen that the first crop of spores is mainly produced by the development of the germ of the disease existing in the seed, whereas the extension of the fungus during the season is effected by the rapid production and dispersion of spores formed in the leaves.

Should this theory prove to be correct, it would be a very serious matter to realise that in certain seeds the germ of a fungus disease is constantly present.

As a set-off against this fearful possibility, ERIKSSON states that some varieties are much more prone to foster the mycoplasma of the fungus than are others. "Horsford's Pearl" winter Wheat is indicated as being very susceptible, as are also some kinds of Barley; in these susceptible varieties the fungus constantly appears on the leaves when the plant is about five weeks old, notwithstanding every possible precaution being taken to guard against infection. It was on the strength of such results as those just indicated that ERIKSSON propounded his theory of mycoplasma, or the presence of fungus protoplasm in the seed of certain plants.

A second source of satisfaction is the statement made by ERIKSSON that even in the case of seeds containing mycoplasma, special conditions are necessary for the conversion of the mycoplasma into the fungus condition capable of producing spores, and if these special conditions—at present unknown—are not forthcoming, the plant may grow up without the fungus being developed.

Now, if the above theory be eventually proved to be true, the point to aim at is that of producing races of plants that can resist forming a symbiotic union with an injurious fungus; and in the second place, in the event of a specially desirable plant being under the spell of the fungus, to endeavour to discover those conditions which are unfavourable to the development of the fungus, and which nevertheless allow the plant infected to attain its complete development. *Geo. Massee.*

(To be continued.)

ASPARAGUS UMBELLATUS.—An ornamental scandent plant, remarkable not only for its foliage, if we may so call it, but also for its clusters of

white, bell-shaped flowers (see fig. 118, p. 379). It is a native of Madeira and the Canary Islands, and is now in bloom in the temperate-house at Kew. A coloured figure was given in the *Botanical Magazine*, t. 7733.

LINNEAN SOCIETY.—At a recent meeting of this Society, Mr. W. BOTTING HEMSLEY, on behalf of the Director of the Royal Gardens, Kew, exhibited a number of specimens and drawings of *Fitchia*, a singular genus of the Compositæ, founded by Sir JOSEPH HOOKER some fifty-five years ago, and named in honour of WALTER HOOD FITCH, then a rising young botanical artist, whose work is now known to all the world interested in illustrations of plants. The original species, *F. nutans*, was discovered by BANKS and SOLANDER in Tahiti on COOK's first voyage; but the genus was founded on specimens collected by HUGH CUMING, almost certainly in Tubuai Island (though recorded from Elisabeth Island), in the austral archipelago, a group of islands in the South Pacific near the Society Islands, of which Tahiti is the largest. More recently, one or two other species of *Fitchia* have been discovered in Tahiti; and last year, Mr. T. F. CHEESEMAN, the Curator of the Auckland Museum, New Zealand, discovered another distinct species in Rarotonga, an island of the Cook group. All the species of *Fitchia* are either small trees or shrubs, from 10 to 25 feet high in the adult stage, with a trunk sometimes as much as 8 inches in diameter. The leaves, not unlike those of an Apple or a Poplar, are opposite, and the yellow flowers are borne in terminal, nodding heads; the largest, some 3 inches in diameter, reminding one of some of the Proteaceæ. Like many other arboreous Compositæ, notably the insular ones, the species of *Fitchia* are resiniferous; and a fragrant oil is prepared from the resin by the Tahitians. In floral structure *Fitchia* presents some anomalies which have led to its being referred successively by different botanists to the Cichoriaceæ, the Helianthoidæ, and the Mutisiaceæ. Mr. HEMSLEY suggested the Helianthoidæ, and pointed out its affinities with *Petrobium*, a monotypic genus peculiar to the island of St. Helena. Another exhibit by Mr. HEMSLEY was a remarkable cluster of fruits of the Sweet Chestnut, found in the New Forest by Mr. CHARLES READ of Sway, and sent to Kew by the Rev. J. E. BELSALL. Usually there are two, three, or four fruits in a cluster, but in this there were at least fifteen. The largest nuts were about an inch in their greatest diameter. Another similar cluster was observed on the same tree. Mr. HEMSLEY also exhibited a flask-shaped bird's-nest, built almost entirely of the softly plumose seeds of a species of *Tillandsia* (Bromeliaceæ). It was sent to Kew by Mr. J. H. HART, the Director of the Botanic Garden, Trinidad, without any information concerning the species or kind of bird that built this beautifully-constructed nest, but it was probably one of the so-called weaver-birds. The entire structure was about a foot in length, and 4 or 5 ins. in its greatest diameter. It was originally attached to the underside of the branch of a tree; the entrance was at the base, and the real nest, a very small thing, near the top of the inside of the flask.

KEW.—The show-house No. 4 is, as usual, very attractive. Chrysanthemums form the greater part of the display, though a little past their best. Among the most striking is Mrs. J. Carter, a variety with thread-like rays of sulphur-yellow. Vivian Morel, a well known lilac variety, is very beautiful. Equally so is Edward Audigier, with crimson-maroon flowers; Cecil Wray is a good yellow; Edith Tabor is also yellow, with curved florets; Helen Owen may be described as having flowers of an orange-bronze colour; Madame Firlat is an incurved white Japanese. Of Chinese Primroses, Crimson King is remarkable for its deep red flowers; Tecoma Smithi, with pinnate foliage and large yellow, trumpet-shaped flowers, is little known at present, but gardeners who visit Kew may see what a remarkable effect can be produced

from small plants in a 48-pot. *Salvia splendens* well deserves its name, its scarlet flowers lighting up the house in a wonderful way; and *Celosias*, in various shades of pink and yellow, are very effective. *Abutilon "Saviti"* is remarkable for its variegated leaves.

THE NEILL PRIZE.—The Council of the Royal Caledonian Horticultural Society met on Nov. 15 for the purpose of awarding the NEILL prize. It may not be generally known that Dr. PATRICK NEILL, for over forty years the Secretary of the Society, left £500, the interest thereof to be applied in furnishing a medal or other reward every second

THE LATE MARQUIS OF BUTE directed in his will that a sum of money equal to a year's salary should be paid to all servants who had been in his employ for two years or more. We are glad to know that gardeners will not be made exceptions in this case.

CHRYSANTHEMUMS: SHOP EXHIBITIONS.—Messrs. B. SHEARIN & SON, of 234, Tottenham Court Road, London, offered a Silver Cup, valued 10 guineas, and also a Gold and Silver Medal, as prizes for twelve vases, four blooms in each. The result was to bring together four fine collections. After the judging, the entire exhibits were placed

with the designing of the same. The exhibition remained open for two entire days. Mr. H. CANNELL, of the Home of Flowers, Swanley, acted as judge.

PAN-AMERICAN EXHIBITION.—Scarcely is the Paris Exhibition closed than we hear of the progress made with a great exhibition to be held at Buffalo, N.Y., from May 1 to November 1, 1901. The people of Buffalo have committed themselves to an expenditure of 5,000,000 dollars besides the amounts to be expended by the United States Government and other public bodies. Nearly all of the nations of Central and South America have

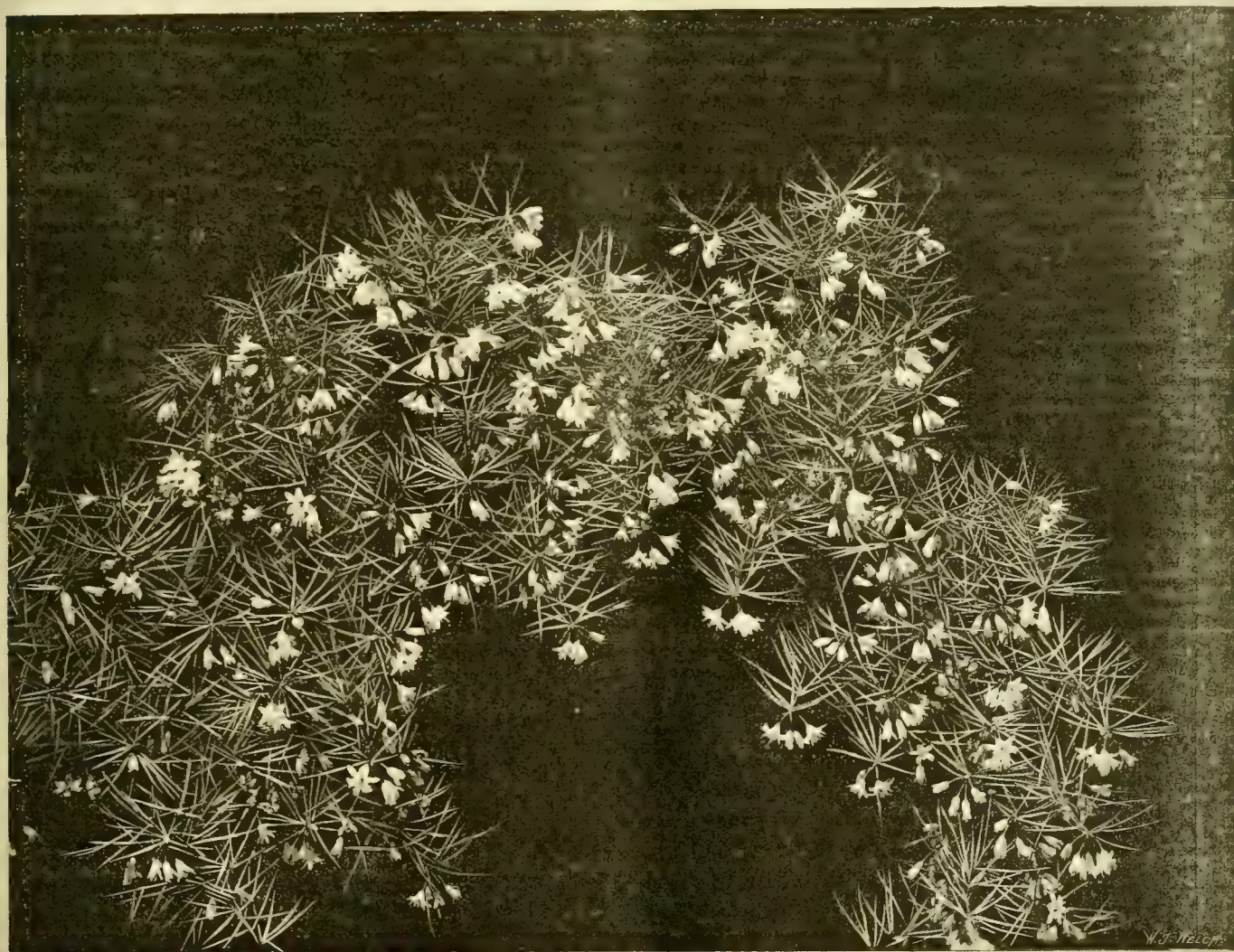


FIG. 118.—*ASPARAGUS UMBELLATUS*: FLOWERS WHITE. (SEE P. 378.)

or third year to a distinguished botanist or cultivator, and the Council has on this occasion unanimously conferred the honour upon Mr. MALCOLM MCINTYRE, gardener to Sir CHARLES TENNANT, Bart., of The Glen, Peeblesshire. Mr. MCINTYRE has been connected with the Society ever since he was a foreman under Mr. GORDON at Niddry House, Midlothian, forty years ago, and since his return to Scotland twenty-two years ago, which is the length of his service at The Glen, he has been one of the most successful exhibitors at the shows of the Royal Caledonian Horticultural Society in fruits, flowers, and plants, and by his exhibits he may be said to have "made the pace" for many years for exhibitors in Edinburgh.

in the window, and, needless to state, caused a large concourse of spectators to assemble. The 1st prize was awarded to Messrs. W. WELLS & Co., of Redhill, for very fine blooms, of great regularity of form and brilliancy of colours; the 2nd to Mr. G. HUNT, gr. to P. RALLI, Esq., Ashted Park, Epsom, whose specimens were very large, but not so varied in colour; the 3rd to Messrs. CRAGG, HARRISON & CRAGG, Heston, Middlesex, whose blooms were choice and well varied, but lacked the size of the others. They remained on exhibition during the following two days; the Silver Cup, also the Gold and Silver Medals, being on view at the establishment of Messrs. SIDNEY MARKS & Co., 38, Tottenham Court Road, who had been entrusted

already sent formal acceptances to the invitation to participate in the Pan-American Exposition. Exhibits showing the resources of all the principal countries of Central and South America are now in course of preparation. Government officials are preparing exhibits from the Philippine Islands, Porto Rico, Cuba, and the Hawaiian group. About 15 acres have been set apart for the court of the State, and foreign buildings on the eastern side of the grounds, and a little south of the main group.

NATIONAL CHRYSANTHEMUM SOCIETY.—The Annual Dinner of the above Society will take place in the Venetian Hall, Holborn Restaurant, High Holborn, W.C., on Wednesday, November 28, at

6.30 P.M. sharp.¹ T. W. SANDERS, Esq., F.R.H.S., has kindly consented to take the chair. The Challenge Trophy, Holmes Memorial, and other Cups, &c., will be presented to the winners during the evening. The musical arrangements by Mr. GURNEY RUSSELL. Tickets, 5s. each (exclusive of wine). On this occasion the presence of ladies is most desirable. Morning dress.

INTERNATIONAL CONGRESS OF ROSE-GROWERS.—“The Journal of the National Horticultural Society of France,” in its number for October, has a full report of the proceedings of the Congress on June 14 last. Amongst the interesting papers read on that occasion was one by Mr. GUILLON on the classification of Roses for garden purposes. For this purpose, M. GUILLON establishes seven groups among hybrid perpetuals, viz., 1 group, illustrated by Charles Lefebvre, bright red carmine; 2, General Jacquemont, brilliant red; 3, Jules Margottin, cherry-red; 4, La Reine, lilac-rose; 5, Souvenir de la Reine d'Angleterre, brilliant rose; 6, Triomphe de l'Exposition, red crimson; 7, Victor Verdier, carmine-rose; 8, Géant des Batailles, fiery red; Madame Laffay, deep rose; 10, Madame Recamier, flowers white, flushed with rose. Each of these groups is distinguished by characteristic features, which are given at length, and a list of varieties belonging to each is also given.

COUNTY OF MONMOUTH.—Her Majesty's Inspector reports as follows on the industrial training afforded in the Farm School:—This has received favourable notice in previous years, and keeps well up to its high standard. In addition to the ordinary work of a farm and market-garden, which is thoroughly taught, the care expended over pasture experiments, grafting, and the greenhouse, affords work of a special importance educationally. The whole value of the scheme of practical and theoretical training is enhanced by the lectures and demonstrations given by Mr. GRANT on behalf of the County Council, and his friendly interest in the boys and their work.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The concert recently held at Chertsey in aid of this deserving Institution, as noted in these pages previously, resulted in a sum of £12, which was duly forwarded to the Secretary. Mr. A. J. BROWN, Honorary Secretary of the local auxiliary branch of the Gardeners' Royal Benevolent Institution, was fortunate in obtaining the services of several talented vocalists, and the concert went off with great éclat.

A CHRYSANTHEMUM SHOW IN MARK LANE.—On the 12th inst., an upper room of the spacious Corn Exchange was filled to overflowing with fine blooms of Chrysanthemums, Orchids, and other flowers, in aid of the Corn Exchange Benevolent Society. There were four competitive classes for members of the Corn Exchange only, and the same for non-members. The competition was very spirited throughout, and excellent blooms were staged. The arrangements were carried out by Mr. W. R. CLARKE, Treasurer, and Mr. G. M. EDWARDS, Secretary; and at the close of the exhibition the blooms were sold by auction, in aid of the gardening charities.

PINES, ETC., FROM THE BAHAMAS.—From the latest trade reports from the Bahamas we learn that last year 3,988,973 Pine apples were exported, of the value of £28,315, as compared with 4,197,620 fruits in 1898, valued at £24,360. Of Oranges, last year, 482,628 were exported, valued at £1,199; in 1898, the fruits numbered 2,258,478, valued at £3,061.

CURRENTS FROM VICTORIA.—With the view of eliciting information as to the possibility of supplementing the supply of imports from Greece, a correspondent addressed inquiries to various colonial authorities. A few days since a reply was received from “Victoria Office” to the effect that “from inquiries made by the Agent-General for that

colony it appears that there will not be any consignment of Victorian dried fruits arriving until after the December-January crop is harvested.” It is added that “Victoria is not yet supplying her own requirements in regard to Currants.”

SURVEYORS' INSTITUTE.—The next ordinary general meeting will be held on Monday, Nov. 26, 1900, when a paper will be read by Mr. A. T. WALMISLEY (Fellow), entitled “The Roofing of Farm Buildings.” The chair will be taken at 8 o'clock.

—The Institution Library will be open from 5.30 to 8 P.M. every week-day evening (Saturdays excepted) from October 1 to March 31, for the convenience of members and students of the Institution wishing to consult professional text-books and other works. Notice is given that the Library will not be open on the evening of Wednesday, Nov. 28.

“LA SEMAINE HORTICOLE.”—It is announced that this important publication, issued under the direction of M. LUCIEN LINDEN, will, after the close of the present year, take a twelve months' holiday. In 1902 it will reappear with many modifications and improvements. The *Semaine Horticole*, like the *Lindenia*, is the personal property of M. Linden, and has no direct connection with the great society “L'Horticulteur Coloniale,” also directed with so much zeal by M. LINDEN.

“THE CHRONICLE OF A CORNISH GARDEN.”—As this chronicle appeared in our own pages, we need not do more than state that Mr. HARRY ROBERTS, the chronicler, has issued his pleasant articles in the form of a book, published by JOHN LANE. By way of appendix, some useful lists of winter-blooming plants, border plants, rock plants, room plants, and hardy fruits are added.

LEONARD RAUWOLFF.—Comparatively little is known of this sixteenth century botanist. A native of Augsburg, he matriculated at Montpellier in 1560, collected largely in the neighbourhood of that town, and on the shores of the Mediterranean; and travelled for three years in Asia Minor and the Holy Land, a journey in those days attended with great risk. His herbarium is still preserved in the University of Leyden. For the purpose of studying the plants of RAUWOLFF, and especially those collected in Provence, M. LUDOVIC LÉGRÉ visited Leyden, and has published the results of his investigation in an 8vo volume of 147 pages. Among other things, M. LÉGRÉ finds confirmation of his previously-expressed opinion, that the *Stirpium Adversaria*, generally attributed to LOBEL, is really the work in the main of PIERRE PENA. M. LÉGRÉ has made a valuable contribution to the history of botany. His pamphlet may be obtained of H. AUBERTIN & G. ROLLE, Marseilles, Rue Paradis 34.

THE WOMEN'S AGRICULTURAL AND HORTICULTURAL INTERNATIONAL UNION now publishes a quarterly leaflet in French and English. No. 3 of the “Bulletin Trimestriel” contains an account in English and in French of the visit of a party of Essex agriculturists to Denmark; together with other notices of an agricultural and horticultural character.

IRIS STENOPHYLLA, *Haussknecht* (MSS.), according to Mr. SIEHE of Mersina, is only an early blooming variety of *Iris Heldreichi*. Mr. BAKER (*Gardeners' Chronicle*, March 15, 1900) also considered it as specifically the same as *I. Heldreichi* (see also *Bot. Mag.*, t. 7734). This species, we learn, was so named by Mr. SIEHE in MÖLLER'S *Garten Zeitung*. Our illustration, p. 171, March 17, 1900, was taken from a plant exhibited before the Royal Horticultural Society.

GREAT ROOT AND VEGETABLE SHOW AT COGGESHALL.—Some few years ago the enterprising firm of J. K. KING, seed growers, of Coggeshall and Reading, held annually a root show at the former place. Owing to the depressed condition of agriculture, however, this event had to be dropped for several years. But last year the present mem-

bers of the firm, Mr. HERBERT KING and Mr. LEONARD KING, thought fit to revive the exhibition, and the success which attended their efforts must have been very gratifying to them. Tuesday, November 6, was the day fixed for the exhibition this year, and the show was on a much larger scale than last year, the number of entries exceeding those of the previous exhibition, while there was a much better attendance. It is admitted amongst most practical agriculturists that the selection of roots is as necessary to the success of agriculture as breeding from pedigree stock. To demonstrate what can be accomplished by the process of selection is this firm's object in holding their annual show, which is one of the largest of its kind in the country. This year prizes amounting in value to over £100 were offered, and the entries numbered 450. The exhibits, which were sent by Mr. JOHN K. KING's customers from all parts of England, were displayed in one of the spacious seed warehouses of that firm. The roots were of wonderful size, and afforded a striking testimony to the value of selection which is annually carried out on Mr. J. K. KING's large seed farms. In the horticultural part of the exhibition the vegetables were of a high standard of excellence. *Extract from Essex County Standard*, Nov. 10.

“BLÜHENDE KAKTEEN.”—Under this title and its Latin equivalent, *Iconographia Cactacearum*, Prof. SCHUMANN, of Berlin, is issuing a series of coloured 4to plates, illustrative of Cactaceous plants. The plates before us are accurate representations and very pleasing, so that we doubt not they will be very acceptable to lovers of these plants. The text is in German, the descriptions of new species in Latin, and ample reference is made to the bibliography of the plants. The work is issued under the auspices of the German Cactus Society, and is published by Herr J. NEUMANN of Neudamm.

LABELS.—Visitors to Kew have much to be thankful for, more especially have they reason to be grateful for the care now exercised in labelling the plants. It is the exception in the houses now to find a plant without a label. Even the florist's flowers are duly named.

THE TROPICAL AQUARIUM at the end of the Palm-house at Kew is worth a visit just now, if it be only to see the curious Gourds, strange of form and rich in colour, which hang from the roof.

PASSIFLORA GALBANA, MAST.—Described and figured in these columns, November 7, 1896, p. 555, is now in bloom in the Begonia-house at Kew. It is little known, but its graceful appearance and elegant white flowers give it claims upon the attention of gardeners. Unlike most of its congeners, this species has entire leaves.

CALLIPSYCHE MIRABILIS (see *Gard. Chron.*, March 31, 1900), with whitish, and *C. aurantiaca*, with yellow flowers, are in flower at Kew. The umbellate flowers, and the long protruding stamens are very remarkable.

ORNAMENTAL STOVE PLANTS.—There is sometimes a difficulty in securing winter-flowering stove plants to lighten the monotony of the foliage plants. At Kew just now *Ruellia macrantha* is in bloom with very large, rose-pink, trumpet-shaped flowers; *Peristrophe speciosa*, an Acanthad with rosy-violet flowers; *Browallia speciosa* with large, blue flowers; *Justicia calycotricha*, with yellow flowers; *Amasonia calycina* may also be mentioned in this connection. *Begonia Gloire de Lorraine* is invaluable at this season.

KNIPHOFIA MULTIFLORA.—I have just read in a recent issue the note relating to *Kniphofia multiflora*. I received the plant from Mr. MAX LEICHTLIN in October, 1898, and it bloomed in my garden October, 1899. It is again in flower now, and it withstood the winter 1899-1900 (very mild, it is true) under a covering of leaves. The lowest

temperature recorded was 5° Cent. below freezing point. I noticed the plant in the *Revue Horticole*, 1899, p. 508. Marc Micheli, Château du Crest, Geneva.

FRAGRANT TREES AND PLANTS.—A lecture on "Fragrant Trees and Plants" was given recently at Winchester House by Mr. DONALD M'DONALD, before the members of the National Amateur Gardeners' Association. Sir GEORGE C. M. BIRDWOOD occupied the chair, and said that he regretted that among specialists there had been too great a tendency all through the closing century to develop enormous flowers and bright colouring in plants, to the almost total neglect of the cultivation of those plants attractive chiefly on account of their fragrance. It was not only that the fresh fragrance of flowers as naturally exhaled added to the attractiveness of gardens, but that it rendered them more healthful. The lecturer gave an historical sketch of fragrant trees and plants, tracing their use and cultivation from the time of the early Eastern nations through the Middle Ages, up to the present, illustrating his remarks with lantern-slides. The cultivation of plants and flowers in large areas had, he said, attained important dimensions in recent years, wherever the climate gave them sufficient intensity of odour for profitable extraction. In our own country we had the Lavender and Peppermint-fields at Wallington, Mitcham, Hitchin, and Canterbury, and the herb-fields in Cambridgeshire and Lincolnshire. In the south of France many thousands of acres were devoted to flower growing for commercial purposes. Statistics showed what an enormous demand there was for scents and perfumes, and he directed attention to the question whether it would not be advantageous to the community in general to develop the production of such of the raw materials as could be grown in this country and its colonies. Those materials consisted mainly of essential oils extracted from flowers, fruits, herbage, wood, and roots of plants. While the English climate would not admit of the cultivation of Orange blossoms as a commercial crop, there was no reason why such things as Lavender, Peppermint, and Camomile should not be grown on a greatly extended scale, and be much more profitable than were many crops now put on the land. *Standard*.

"WELWITSCH'S PLANTS."—The fourth part of the catalogue of the African plants collected by the late Dr. WELWITSCH has just been issued, under the authority of the Trustees of the British Museum. The catalogue is the work of Mr. W. P. HIERN, and is apparently carried out with the conscientiousness and accuracy which characterise the work of this botanist. Mr. HIERN must have been in a difficulty with Ferdinanda, Ferdinanda, Ferdinanda, Ferdinanda, and Ferdinanda. He has elected to retain Ferdinanda in spite of the earlier name of Ferdinanda, published by LAGASCA. The occasional notes on the general appearance of the plants, and on the physical aspects of the country in which they are found, are very interesting, and vary the dry descriptive details in a very agreeable manner. This part completes the first volume. The first part of the second, by Dr. RENDLE, comprising the Monocotyledons was issued previously.

SPRAYING.—It is a matter of satisfaction to us to see the progress that is being made in the practice of spraying for insects and fungi. For years we advocated the practice without much obvious result. But now we are glad to see that farmers and gardeners are becoming awake to their interests in this direction. An entirely novel application of the practice is for the purpose of destroying Charlock in Corn-fields. Copper sulphate in solution of a strength of from 3 to 5 per cent. was used, 50 gals. of the solution being used per acre. The spraying was done at intervals from the end of April to the first week in July. The Corn is not injured, but the Charlock is destroyed. Such is an abstract of the results obtained by Mr. G. F. STRAWSON, 71A, Queen Victoria Street, E.C.

PUBLICATIONS RECEIVED.—We have received from the Botanical Department, Trinidad, the *Bulletin* (No 25) of *Miscellaneous Information*, October, 1900, dealing with Sugar-canes introduced to the West Indies, Raising New Varieties of Sugar-canes, Rubber in Brazil, Early Fruiting of a Grafted Mango, Errors in Planting, and similar subjects; also the *Bulletin of Miscellaneous Information* (extra number), October, 1900.—*Tobacco Culture* (a reprint), by Mr. J. C. Espin.—Western Australia Department of Agriculture, *Report by the Secretary to the Department for the year ending December 31, 1899*, with a *Supplementary Report for the half-year ending June 30, 1900*.—From the Agri-Horticultural Society of Madras we have received *Proceedings of the Society*, October to December, 1899; also from January to March 1900; also Title-page and Index for vol. ix. (new series), 1896-97-98.—From the same Society comes the *Annual Report for 1899*: "The year, on the whole, was not a favourable one from an agricultural and horticultural point of view, as the weather was very dry."—Also from the same Society, *Exchange Seed List*, 1900.—Delaware College Agricultural Experiment Station, *Bulletin* No. 48, October, 1900, *Top-Working Apple Trees*, by G. Harold Powell.

THE WEATHER IN WEST HERTS.

THE weather was unusually warm for the season at the beginning of the past week, but gradually became colder as it advanced. On no night, however, did the exposed thermometer show more than 4° of frost. The soil is at the present time at about a seasonable temperature at 2 feet deep, but about 2° colder than the average at 1 foot deep. Since the present month began, rain has fallen on all but five days, to the total depth of nearly 2 inches, which is equivalent to a watering of about 9 gals. of water on each square yard of surface in my garden. During the same period, owing to the wet weather at the end of October, more than that quantity of rain-water has come through the bare soil percolation gauge, but it was only on the 15th that any rain-water at all came through a similar gauge covered with short grass. In fact, until then, there had been no measureable quantity passing through the latter gauge since the middle of April. On the 16th, for the first time for nearly a month, did the wind come from any point of the compass between north and east. The sun shone for four hours on the 19th, but during the previous seven days the duration of bright sunshine only averaged about half an hour a day. *E. M., Berkhamsted, November 20.*

HOME CORRESPONDENCE.

HELICHRYSUM GULIELMI.—Doubtless there were many others besides myself who were gratified to see the illustration of the flowers of this new *Helichrysum* in the *Gardeners' Chronicle* of Nov. 10. I had the great pleasure of visiting that wonderful collection of new and rare plants in Mr. Gumbleton's garden during the past summer, and of remarking H. Gulielmi and the others of the set of new *Helichrysums*. They were not in bloom at that time, so that the figure is of special interest to me. My object in writing now is to supplement the note which accompanies the illustration, by saying that these *Helichrysums*, even in leaf alone, are really ornamental plants for the garden, and should not be valued for their flowers alone. On referring to my notes, taken at the time of my visit, I find that my favourable recollection is supported by what I then wrote. As plants for planting out in summer they might be usefully employed. *S. Arnott.*

THE SMALL FARMER AND HIS ORCHARD.—A few years ago, a shrewd practical gardener took a small farm in this neighbourhood, a small field of which he planted with Apple-trees. Soon after the Ordnance Survey came this way, and the trees were duly marked thereon as an orchard. The gardener, who farmed successfully, was now metamorphosed into a thorough practical farmer, found the farm too small for him, gave it up, and took a very much larger one. The fruit-trees, so long as he remained on the place, were, of course, taken care of. The new tenant, on coming in, found the trees unprotected, and neither he nor his landlord felt inclined to go to the expense of fencing the trees individually, and they were not yet sufficiently strong to resist cattle, consequently the trees soon got broken, and most of them disappeared. Passing

there a short time ago, and seeing the farmer in the field, I went up to him, and made some enquiry as to the disappearance of the trees. "Well," he said, "my cows have about spoiled the lot. There are, as you see, one or two still standing, and I would not mind if they, too, were gone. You see, you can't depend upon a crop of Apples every year, and when there is a crop, everybody else who has an orchard has a crop likewise, and you can make nothing of them, no matter how carefully you grade them. It suits our purpose better to graze the field; we sell the milk and butter—of that we are certain, and we know what we are doing. But to depend upon an occasional crop of Apples, as I have already told you, we would never know where we were; leastways," continued the farmer, "that is my experience; but there may be some," he said, "who from, perhaps, their better knowledge of how to manage an orchard, may be able to do better. But I must bid you good afternoon; you see, it is milking-time, and I must go and fetch my cows up. By-the-by," calling back to me, he said, "I see you are planting some fruit-trees on the opposite side of the valley, and you have some cows too. I shall be interested to know, as time wears on, to which, i.e., the cows or the trees, you will stick to the longest." *W. Miller, Berkswell.*

LATE CHRYSANTHEMUMS.—It is a source of exceeding pleasure to me as I walk among the private houses and streets of Kingston, to find such vast numbers of Chrysanthemums blooming profusely and most beautifully in the cottage and villa fore-courts. The present autumn being neither wet nor frosty has been most kind to these late flowers; but then autumns have been similarly kind for several years. It is interesting to find also that in spite of the abundance of early-blooming Chrysanthemums, most of which are moderately dwarf in habit, that the varieties which are at their best in November seem to be most in favour. Very probably neighbour helps neighbour, but still many of the varieties grown rank amongst the oldest in commerce, yet they are very beautiful all the same. But many varieties that are of more recent introduction, and have had good reputations as exhibition flowers, it left to their natural courses bloom finely and freely. The plants when thus grown and not disturbed do not produce floral shoots, but clusters of flowers in great profusion. With all our talk of the great value of the Chrysanthemum as a town plant for greenhouse culture, I much doubt whether in any phase of growth it presents more added beauty than when seen by hundreds in these street fore-courts. Not much culture is given the plants beyond occasionally lifting and dividing the stools, then replanting in freshly manured soil. It is this ease of culture, allied to their blooming so late in the year, which render Chrysanthemums such favourites. Really their value for garden decoration in the early winter cannot be too highly estimated. *A. D.*

FRUIT PACKING.—As a reader of the *Gardeners' Chronicle*, and being in the fruit trade myself, I have read your article on the above subject with much interest, and agree with you very much in regard to the careless and shamefully wasteful manner in which fruit, &c., is sent to our markets and agents for sale. Take, for instance, packages of good English dessert Apples, Pears, &c., and compare them with packages which arrive from other countries. English fruit only too often arrives simply emptied into pots, half-bushel baskets, barrels, &c., with a mere sprinkling of hay on the bottom of the packages, not any on the sides, where it is so much needed, and not even a sheet of paper between the fruit. Fruit arriving in this condition is of no use to anyone (for it is not fit for anyone to consume), and it is impossible to get half-a-dozen really sound fruits out of the package suitable for dessert. This must naturally be a disappointment to the grower, agent, and retailer, and which accounts for packages of English fruit arriving in this half-packed way not being noticed on the markets by a buyer who has a trade where quality and condition must be the first consideration. Another grievance which ought to be remedied, is a more accurate weight in packages; of course, everyone knows that fruit, nuts, &c., will lose weight in transit (and there is this difficulty in transit to be considered, as packages are liable to be tampered with), but not to the amount which is often the case. There is nothing more annoying or likely to disgust a buyer of a package of a certain weight, which is

sometimes actually written on the label, whether it be at $1\frac{1}{2}d.$ or $1s.$ per lb., to find, on bringing it home and weighing the contents, to find that there is $\frac{1}{2}$ -lb., 2 lb., and very often 4-lb. less than the proper weight. Of course, the buyer can always refer these occurrences to the agent, and generally they are willing to meet the buyer (but not always), but leave suspicions of unfair dealing on one side or the other, which tend to prevent matters of this kind being amicably settled and business being done. If your note on this subject has the effect of calling attention to the matter of picking and to a lack of the proper weight in parcels of fruits, the grower would get a better price, and a much better feeling would exist between grower, agent, and retailer, and the latter better able to please his trade. *George Anderson.*

APPLYING WATER TO CACTI AND OTHER SUCCULENTS.—At this season it is customary with gardeners to withhold water entirely from Melon-Cacti, Mammillaria, Cereus, Phyllocactus, Haworthia, Dasylium, Calceolarias, Agaves, Sedums, and other plants of a similar nature, natives of arid parts of the earth, and to continue this treatment. Some persons are not satisfied with the dictum of the professional cultivator who really has nothing wherewith to support his practices, if we except the remarks of travellers, concerning the climates of Mexico, Sonora, the south-east United States, stated more or less in a general manner. Taking it for granted that no rains fall in those regions during the hot season, the dews at night must be heavy, and the moisture these afford would find its way by means of the furrows and channels of the plants to the roots, dew also being deposited on the stones lying on the surface of the soil, if not on the soil itself, much of which would run off into the earth, moistening it. Were it not for this deposit of the kindly dew, what is to hinder a plant from becoming completely dried up? Ought we not therefore to gently syringe or dew over our succulents occasionally in the rest season, and thus afford them a substitute for dew? It may be that one reason why Melon-Cacti are so shy of flowering is that our complete drying off of the plants, soil, roots and all, causes the destruction of many of the finer roots, and a serious check to flowering and to growth. *Anti desiccator.*

LILIUM GIGANTEUM.—We have read with great interest the Rev. D. R. Williamson's article on "The Past Lily Season" in the *Gard. Chron.* of November 9, and we enclose you two photographs of a *Lilium giganteum* which blossomed in our garden this year. The bulb was planted in October, 1897, on the north side of our small greenhouse, and has had no other protection than Cocoanut-fibre over it in the winter, and a hurdle at the east side, to protect the leaves from the cold, rough winds this spring. The flowering-stem is 9 feet 10 inches high, and there are twenty large blossoms at the top. The garden is exposed to the north and east, and the soil is sandy loam. *J. M. N.* [The photographs were excellent representations of this noble Lily, of which we have given illustrations on former occasions. *Ed.*]

THE BRITISH OAK.—In the interesting discussion on this subject in recent issues of the *Gardeners' Chronicle*, I notice some of the writers mention that Oak-timber cannot be grown successfully in wet places. The character of the Oak on Belvoir estate is known to many of your readers, and I need only mention that the trees to which these notes refer measure from 9 to 12 feet in circumference at 3 feet from the ground, and have in most instances perfectly straight clear stems from 50 to 80 feet and upwards in height. After many years experience in various parts of the kingdom, I can truthfully say that I have never seen trees to equal them. Some of the finest that exist here are growing on the sides and in the bottom of a natural dell of several acres in extent, the surrounding banks have very steep slopes, and a fall of over 100 feet from the top to the bottom. This dell is open to the south-east, but water is retained in the centre, which, I am told, was once a pond many years ago, and the hollow is so full of water during the winter months that it is impossible to cross it on foot, yet the finest trees of all are growing here in the wettest part of the plantation, perfectly healthy, and giving much more than those on the banks, the latter showing stuntedness in many places. The soil is blue lias clay, containing very little if any lime. This shows that first-class Oak-timber can be grown in

a wet situation, but moisture and suitable soil are not all that is required—far from it. There are at Belvoir trees that are growing singly, a short distance away, in exactly the same kind of soil, with plenty of moisture, but without shelter of any kind, and these are useless as timber. I have carefully examined the Oaks near at hand, and cannot find one true specimen of *Q. sessiliflora* among these large trees, but some of them appear to be of an intermediate character. Both forms of branches are common, as shown in your figures from Bowood, Wilts, No. 86 and 87, p. 295; but trees which, judging by those plates, might be identified at a distance, as fig. 86 (*Q. sessiliflora*), prove to be the same in foliage and fruit as the other form, fig. 87, and I contend that the form of the top cannot be relied upon as a means of identification. A few young trees (about fifteen years) of *Q. sessiliflora* show a decided petiole to the leaves, and all the fruit is sessile. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

GRAPE DIAMOND JUBILEE.—I have watched with interest the correspondence on this variety of Grape, and was somewhat surprised when I read what the Fruit Committee of the Royal Horticultural Society had to say about it; but if they had any doubt in their minds, I consider they did what was right so far. But instead of stopping where they did, why not have ordered a trial of the variety alongside of other new and old Grapes at Chiswick, which could be easily managed by grafting or inarching some scions on to one or two of the old Vines, by which means fairly good results could be obtained in two years. The Fruit Committee would then be in a much better position to make or withhold an award. I do not mean to say that in a trial of this kind the best results would accrue. Most of the readers of the *Gardeners' Chronicle* who are interested in Grapes must have noticed how a certain variety will do well in one place, while in another place not over half-a-mile distant, the same variety will be quite a failure. Indeed, we do not need to go so far. I have seen Grapes come out of a vineyard taking leading honours at Edinburgh, the Crystal Palace, &c., and yet in the same house there were Vines of the same variety whose fruit was, if anything, below the average. Yet this is the exception and not the rule; and a trial at Chiswick should be always welcomed by the introducer of anything new in the shape of fruit, flower, or vegetable. So far as Diamond Jubilee Grape is concerned, I ought to know something about it, seeing that I lived for over five years within six miles of Kippen, and only left that district last May; and as I was engaged during that time in making new Vine-borders, planting young Vines, and renovating old borders, it is only natural to think that I should be often at Kippen—so that I have seen Diamond Jubilee from the ripening of the seed down through all its different stages, tasted some of the first fruit it bore, and during the summer months was at Kippen on an average once every three weeks. But it never for once occurred to me that it had the slightest resemblance to Black Morocco. *D. L. M.*

Obituary.

ALEXANDER KENNETH MCLEOD.—Many readers of the *Gardeners' Chronicle* will be grieved to hear of the early decease of the younger brother of Mr. J. F. McLeod, of Dover House Gardens, Roehampton. Mr. A. K. McLeod served an apprenticeship to gardening under the late Mr. Peter Fairgrieve at Dunkeld Castle, Perthshire, and afterwards came south, spending two years in the Marquis of Bute's gardens at Cardiff Castle, and further periods in private gardens in the north and south of England. Many young gardeners who, like the present writer, intimately knew Mr. McLeod in those days, as a strong, upright fellow, thoroughly enthusiastic in the attainment of knowledge pertaining to his profession, have since been pained to see the transformation brought about several years ago by an attack of rheumatic fever, contracted in a garden-booth. Deceased was never able to throw off its effects, although after twelve months he was restored to a certain degree of convalescence. Recognizing that he would not be

again fit for the somewhat trying conditions of a gardener's calling, his friends obtained for him a comparatively light occupation in Glasgow under the Clyde Trust, which he held until his death. The end came on Monday last rather suddenly, and after only a few days' illness. It is a sad and untimely end to what was a very promising career. *R. H. Pearson.*

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 20.—An ordinary meeting of the committees of this Society took place on Tuesday last, in the Drill Hall, Westminster, under conditions far from satisfactory, the light being very poor. The height of the fruit and Chrysanthemum seasons now being past, there was not so large a display in the Hall as we sometimes see there, but the exhibition was nevertheless exceedingly bright and interesting. The most remarkable exhibit was one of winter-flowering Begonias, a strain that has originated from crosses between *B. socotrana* and varieties of the tuberous species, and shown by the raisers, Messrs. JAS. VEITCH & SONS, Chelsea. This exhibit fully furnished one side of one long table, running lengthways of the Hall, and nearly as much space was occupied by a collection of well-grown plants of *B. Gloire de Lorraine*; also a *B. socotrana* hybrid, from Messrs. H. CANNELL & SONS, Swanley. A very large group of plants, including this hybrid Begonia and many other useful species of plant, was shown by J. P. MORGAN, Esq., Dover House, Roehampton (gr., Mr. J. F. McLeod), and furnished an illustration of good cultivation. Other exhibits before the FLORAL COMMITTEE included Chrysanthemums of well-known varieties, and of novelties, three of which were awarded Awards of Merit, and a new hybrid *Tacsonia* with beautiful crimson-flowers. This was shown by Messrs. F. SANDER & CO., St. Albans, and is known as *T. x militaris* (see *Gardeners' Chronicle*, December 30, 1899). It was deservedly awarded a First-class Certificate.

THE ORCHID COMMITTEE had a few good novelties to inspect, and a large group of plants of the Lady's Slipper, *Cypripedium insigne*, from the gardens of J. P. MORGAN, Esq., Roehampton. These plants filled one whole side of a long table. Beyond this there was no extensive group of Orchids shown.

THE FRUIT AND VEGETABLE COMMITTEE had not very much labour, but an Award of Merit was recommended to a capital Cabbage from Messrs. DOBBIE & CO.; and a First-class Certificate to the well-known Pear *Beurré Buisson*, shown from the Duke of Rutland's garden.

In the afternoon Mr. GEO. BUNYARD, V.M.H., gave a Lecture upon "Mistakes in Fruit Cultivation," which was listened to by a large audience.

Floral Committee.

Present: W. Marshall, Esq. (chairman), and Messrs. Geo. Paul, Chas. T. Drury, R. Dean, Jas. Hudson, C. J. Salter, Charles Jeffries, J. D. Pawle, Ed. Mawley, W. J. James, H. B. May, Geo. Gordon, J. Fraser, Jas. Walker, and J. W. Barr.

We shall not need to refer at great length to the exhibit of Begonias from Messrs. VEITCH, but may refer our readers to a note upon these plants on p. 370, where a correspondent describes the plants as seen in the Feltham Nurseries. We may add that the group was composed mainly of the variety *Ensign*, but *Winter Cheer*, *Winter Perfection*, and several newer varieties were represented (Silver-gilt Banksian Medal).

A very large and excellent group of plants was exhibited by J. P. MORGAN, Esq., Dover House, Roehampton (gr., Mr. J. F. McLeod). This was arranged upon the floor of the hall, and in it were upwards of two dozen very fine plants of Begonia *Gloire de Lorraine*, being about 18 inches high, and profusely flowered. On either side of the Begonias were groups of *Coliolums*, of moderate height, but of grand colour; whilst at the back of the group were plants in bloom of *Lilium longiflorum*, also fine foliage Palms, Bamboos, *Phrynium variegatum*, *Cordylines*, *Aralias*, &c. This was one of the largest groups of plants exhibited in the hall for some time past (Silver gilt Flora Medal).

MESSRS. H. CANNELL & SONS, Swanley, Kent, showed a beautiful group of plants of Begonia *Gloire de Lorraine*, in 5-inch and 6-inch pots, each of them presenting a marvellous head of rich pink blossoms. It may be remarked, however, and without prejudice to this beautiful hybrid, that its colour is quite killed if the plants are placed near to a group of plants of the strain shown by Messrs. JAS. VEITCH, as these have flowers more nearly approaching to scarlet colour (Silver Flora Medal).

MESSRS. W. WELLS & CO., Earlswood Nurseries, Redhill, Surrey, showed an exhibit of Chrysanthemum blooms, which

was arranged upon the floor in the centre of the Hall, most of them being disposed in Bamboo-stands. Two prominent ones were furnished with single and small decorative flowers. Another one, which looked more imposing but less graceful, contained very large blooms of Sir Redvers Buller, a crimson Japanese of excellent quality, and Mrs. H. Weeks, Miss Alice Byron, &c. The exhibit also contained fine flowers of Japanese W. R. Church, reddish-crimson, incurving at the tips just sufficiently to show yellow reverse; C. J. Salter, a

Chronicle, Dec. 3, 1898; also Mrs. Carter, pale yellow, with thread-like florets; Mrs. Witty, and Charles' Little Jap, a single-flowered variety, rolled florets, of no decorative use whatever (Bronze Banksian Medal).

A rich yellow Japanese Chrysanthemum was shown by Mr. J. Corbett, gr. to the Rev. Marquis of NORMANBY, Mulgrave Castle, near Whitby.

Mr. J. GODFREY, Exmouth Nurseries, Devon, showed a quantity of Chrysanthemums, including several novelties in

Messrs. PAUL & SON, The Old Nurseries, Cuckshunt, again exhibited blooms of the new Rose Lady Battersea, previously described in these columns; and of Carnation America which was recommended an Award of Merit at the last meeting of the Society, see *ante*, p. 143.

From the Director, Royal Gardens, Kew, was shown a grand truss of scarlet flowers of Brownea Crawfordii, a hybrid between *B. macrophylla* and *B. grandiceps*. It arrived a short time after the Committee had risen, or it would most likely

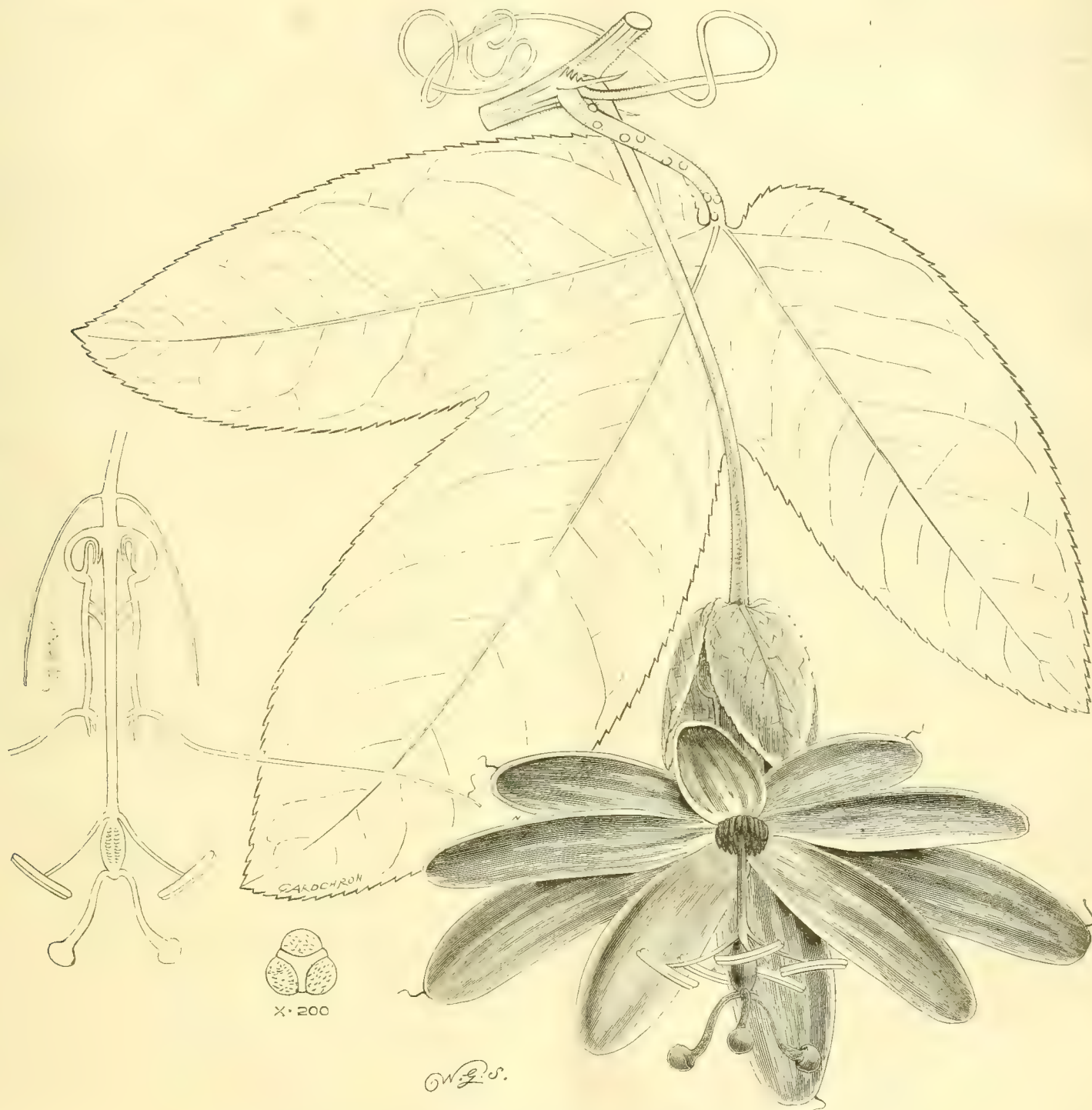


FIG. 119.—TACSONIA MILITARIS X: COLOUR OF FLOWERS RICH BRIGHT CRIMSON.

(Awarded a First-class Certificate at a Meeting of the Royal Horticultural Society on November 20, 1900.)

large yellow Japanese; Ida, a Japanese bloom, reddish coloured and yellow; Madame Von André, a soft or sulphur shade of yellow colour Japanese, with incurving florets; Miss Maud Douglas, a pink-coloured Japanese, incurved; Glorious, a rose-crimson coloured decorative variety; and others (Silver-gilt Banksian Medal).

Mr. J. H. WITTY, Nunhead Cemetery, London, staged a novel kind of group of Chrysanthemums, with large mirror at back. Curious and decorative types were represented, such as "What, Ho!" and Golden Showe see figs. in *Gardeners'*

Japanese and decorative varieties, such as Black Hawk, deep crimson; Crimson Tangler and Kittie, both rather bizarre in character; Elegance, a white single variety; Nagoya, a fine yellow Japanese, &c.

A remarkable seedling of the present year, and named Elbel Woolan, was shown by Mr. THOS. BULLMORE, Canon's Park, Edgware. It was raised from seeds of Souvenir de Petite Anne, sown on Feb. 13 last. The plant carried three good-sized blooms of pale cream colour. Possibly another season the variety may prove to be a better one than its parent.

have been given a Certificate. These Browneas are very handsome flowering plants for cultivation in lofty stoves or hot houses.

Winter-flowering Carnations were shown by Mr. R. C. SANDERS, Halton Gardens, Tring. Ladysmith is a pretty pink coloured variety with fringed petals, very fragrant; and Miss Minnie Hubbard, a yellow ground with rose coloured markings and fairly good calyx. Both varieties are valuable.

Carnations were also shown by Messrs. H. & J. ELLIOTT, who had several very pretty "tree" varieties.

Awards.

Tacsonia militaris.—This is a magnificent bright crimson-flowered hybrid, said to have been raised in the Transvaal from *T. var. Volkemii* and *T. insignis*. But there appears to be some doubt as to its exact parentage; see *Gardeners' Chronicle*, December 30, 1899, p. 484 where a careful examination of the details of the flower led to a suggestion that *T. manicata* (igneae) was probably a co-parent with *T. insignis*. The description and figure (which were reproduced, p. 383) of the flowers then given were prepared from less good specimens than Messrs. F. SANDER & CO., of St. Albans exhibited at the Drill Hall on Tuesday last, when the colour of the flowers was a bright crimson, assuming a slightly purple tint with age. Messrs. SANDER inform us that the plant naturally commences to flower at this season, and continues to bloom freely until the month of May. It will be a most valuable climbing plant for the bright flowers it will afford during the duldest season of the year. The outer lobes of the calyx are striped on exterior side, being green in centre, and having dull crimson margins. For further particulars of the details of the flower, see original description in *Gardeners' Chronicle* already cited (First-class Certificate).

Chrysanthemum Major Plumbe.—A large yellow Japanese, very deep but not wide flower, and long florets, slightly incurving. Shown by Mr. WEEKES, Thrumpton Hall Gardens, Derby (Award of Merit).

C. Miss Jessie Coltee.—We believe that this variety was sent out last season by Mr. H. J. JONES. It is a yellow sport from *Etoile de Lyon*, and was shown on this occasion by Mr. M. E. MILLS, Coombe House Gardens, Croydon (Award of Merit).

C. Mrs. J. Bryant.—A very deep, rather coarse Japanese flower, rosy-violet in colour, florets twisting and incurving with age. From Mr. H. PERKINS, Greenlands Gardens, Henley-on-Thames (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (hon. sec.), J. Gurney Fowler, De B. Crawshay, R. Brooman-White, H. Little, J. Gabriel, H. A. Tracy, W. H. Young, W. H. White, F. J. Thorne, H. J. Chapman, A. Hishop, E. Hill, J. Jaques, J. Douglas, and T. W. Bond.

Sir Trevor Lawrence, Bart., Burford (ac., Mr. W. H. White), staged a small but select group of rare and pretty species, five of which received Botanical Certificates (see Awards). The more truly garden plants consisted of *Laelio-Cattleya* × *Dominiana inversa*, a very dark-coloured flower, and *Cypripedium* × *Argo-Morganiae*, a handsome hybrid, with features leaning toward *C. Argus*, and with finely-spotted flowers of similar colour to that species. Plants of much interest were *Signat-stalix radicans*, *Polystachya Buchananii*, *Cattleya labiata rosea-flora*, *Masdevallia platyglossa*, and *Masdevallia dorsalis*, Lehmann, a very remarkable species, always growing head downwards, and bearing showy flowers of a yellowish tint, closely blotched with claret colour.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, were awarded a Silver Flora Medal for a very bright and interesting group, consisting chiefly of hybrids of their own raising, including seven plants of the pretty *Laelio-Cattleya* × *Decia* (Perrini × *C. aurea*), *L.-C.* × *Statteriana* (L. Perrini × *C. labiata*), *L.-C.* × *Lady Rothschild* (C. Warscewiczii × L. Perrini), all fine for winter-flowering, coming in with the fine *Cattleya* × *Mantini*, and *C.* × *Mrs. J. W. Whiteley*, which were also shown. Other very fine plants in the group were *Laelio-Cattleya* × *Labiata* (L. crispata × *C. Trianae*), resembling a fine *L. c.* × *exoniensis*; *Oncidium* × *Mantini superbum* (Marshallianum × *Forbesii*), *Cypripedium* × *Zethus* (insigne Chantini × *Charlesworthii*), an effective flower with many of the characteristics of *C. i. Chantini*, but the form is changed, and the dorsal sepal enlarged by the influence of *C. Charlesworthii*; *C.* × *Memnon Charlesworthii* × *Spicerianum* (?), a pretty novelty; *C.* × *Acteus superbum* (insigne Sandera × *Leeanum*), like a yellow *C.* × *Leeanum*; *C.* × *Prospero* (Spicerianum × *insigne Sandera*), also good; three forms of the yellow *Laelia* × *Mrs. Gratrix*, all varying in their tints; three *Cattleya* × *Portia* (Boweringiana × *labiata*), *L.-C.* × *Tiresias* (Boweringiana × *L.-C.* × *elegans*); *Cattleya* × *Chloris* (Boweringiana × *maximalis*), *C.* × *Pandora* (bicolor × *Trianae*), *Cypripedium* × *T. B. Haywood*, very fine; *Laelio-Cattleya* × *Frederick Boyle* (L. anceps × *C. Trianae*), and other hybrids.

Messrs. HUGH LOW & CO., Bush Hill Park, secured a Silver Banksian Medal for an effective group of well-grown Orchids, the centre of which was a very fine, profusely-flowered example of *Cattleya labiata*. Yellow-flowered *Cypripedium* insigne were represented by *C. i. Sanderae*, *C. i. Sanderianum*, *C. i. Ernesti*, and *C. i. Balliaii*, the last-named having blooms of a greenish-yellow tint. A very dark coloured *Laelia pumila* and some good hybrid *Cypripediums* were also included.

J. P. MORGAN, Esq., Dover House, Roehampton (gr., Mr. McLeod), was awarded a Silver Flora Medal for a grand display of fine specimens of *Cypripedium* insigne, arranged with foliage plants, and occupying the entire length of the table; on one side of the table.

F. KNIGHT, Esq., Thundersley House, Thundersley (gr., Mr. E. Marston), staged a pretty group of showy Orchids, unusually well flowered, and especially the fine specimens of *Cattleya labiata*. With them were good *Cypripedium* Charlesworthii, *Dendrobium Phalaenopsis Schroderianum*, &c.

Sir FREDERICK WIGAN, Bart., Clare Lawn East Sheen (gr., Mr. W. H. Young), showed a very fine *Cattleya* × *Mrs. J. W. Whiteley*, *Laelia pumila gigantea*, a pretty hybrid *Zygo-*

colax, near to *Z. c.* × *leopardina*, and the remarkably showy *Laelio-Cattleya* × *Mrs. Birkbeck* (see awards).

Mrs. BRIGGS-BURY, Bank House Accrington (gr., Mr. Wilkinson), sent a spike of a very remarkable spotted *Ondoglossum*, differing from the previous flowering, and now exhibiting the remarkable feature of two totally different sets of flowers on one spike. The four basal flowers have narrow, white segments, heavily spotted with purple, and bear some resemblance to those of the *O. cirrosium* hybrid, *O.* × *Marriottianum*. The apical five flowers were near to *O. crispum guttatum*, but in the crests of both sets of flowers there were slight indications of hybridity. The depauperation of the basal set of flowers might result from retarded or interrupted flow of sap, and the floral development of the upper from restored vitality. Mrs. BRIGGS-BURY also showed *Cattleya labiata alba*, Bank House variety.

C. J. LUCAS, Esq., Warnham Court, Horsham (gr., Mr. Duncan), showed two very fine varieties of *Dendrobium Phalaenopsis*.

Mrs. TEMPLE, Leyswood, Groombridge (gr., Mr. Bristow), showed *Lycaste Skinneri* "J. W. Temple," a pretty, light-coloured form.

WALTER COBE, Esq., Dulcote, Tunbridge Wells (gr., Mr. J. Howes), showed *Cypripidum* insigne Harefield Hall variety, and the very fine *C.* × *Colbie*.

J. F. EBNER, Esq., Woodlands, Beckenham (gr., Mr. A. Waite), showed several good *Cypripediums*.

De B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr., Mr. S. Cooke), showed a finely-flowered plant of the natural hybrid *Oncidium* × *Mantini* *Crawshayanum* (Marshallianum × *Forbesii*), this form being the nearest to *O. Marshallianum* of any yet observed, and having handsome flowers, the labellum and petals being for the greater part of a clear yellow tint.

Mrs. HAYWOOD, Woodhatch, Reigate (gr., Mr. C. J. Salter), showed *Cypripedium* × *Bingleyense* (insigne Charlesworthii).

Mr. JAS. DOUGLAS, Great Bookham, showed his *Laelia* × *Briseis* (baryophylla × *purpurata*), with pretty yellowish-white flowers.

J. T. GABRIEL, Esq., Streatham Hill (gr., Mr. E. Ranson), showed a good *Cattleya Dowiana*.

W. A. BILNEY, Esq., Fir Grange, Weybridge (gr., Mr. Whitlock), sent *Laelio-Cattleya* × *intermedia-flava*.

Messrs. F. SANDER & CO., St. Albans, showed a very fine variety of *Cymbidium Tracyanum*.

Awards.

FIRST-CLASS CERTIFICATES.

Cypripedium × *Priani* (Niobe × insigne Chantini ?), from Messrs. JAS. VEITCH & SONS, Chelsea. A grand flower, large and proportionate in all its parts; upper sepal large, white, with a green base, from which a purple line runs up the centre, with some smaller purple markings on each side; petals and lip of a yellow tint, and having the larger area of the surface tinged with purplish-red. A gratifying outcome of the use of *C.* × *Niobe* (Spicerianum × *Fairieanum*), as the male parent.

Cattleya × *H. S. Leon* from H. S. LEON, Esq., Bletchley Park (gr., Mr. A. Hishop). This results from crossing *C. Schroderae eximia* and *C. Warscewiczii Sanderiana*. A very distinct and showy hybrid. Sepals and petals light lilac-rose. Lip dark ruby-red throughout except some light yellow markings in the tube.

AWARD OF MERIT.

Laelio-Cattleya × *Mrs. Birkbeck* (L.-C. × *callistoglossa* × *L. purpurata*), from Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young). A very brightly-coloured flower, partaking equally of both parents; the petals being extended forward on each side of the lip, give the flower a distinct feature. Sepals and petals tinged with light-rose; lip yellow in the tube, the showy front lobe of a glowing purple colour; the apex elongated as seen in L.-C. × *Hy. Greenwood*.

Cypripedium × *Colbie* (J. Howes Mrs. Chas. Canham), from WALTER COBE, Esq., Dulcote, Tunbridge Wells (gr., Mr. J. Howes).—A noble flower, broad in all its parts, and of the peculiar white tinge with rose colour seen in *C.* × *Chas. Canham*. The fine upper sepal is green at the base with purple lines, and a broad white margin on the upper part.

Laelio-Cattleya × *Gottolina* "Mrs. Douglas," from Mr. JAS. DOUGLAS, Edenside, Gt. Bookham.—A fine home-raised form of the imported natural hybrid (L. tenebrosa × *C. Warneri*). Sepals and petals yellowish-white, with light rose markings at the tips; lip dark rose, veined with purple.

BOTANICAL CERTIFICATES.

Angraecum distichum, from Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. H. White).—A singular small-growing species with compressed growth, bearing small white flowers.

Corophantes Mastersiana, Lehmann, from the gardens of Sir TREVOR LAWRENCE, Bart.—This is the second time that this extraordinary species has flowered at Burford. The singular flowers, which are borne on upright spikes, are of a coppery-red, and quite distinct in form from other species.

Mayiloria Monarda, from Sir TREVOR LAWRENCE, Bart.—Flowers white, resembling a small *M. grandiflora*.

Pleurothallis stenopetala, from Sir TREVOR LAWRENCE, Bart.—Leaves fleshy, cordate, the greenish flowers recumbent on them.

Calogyne jimbriata, from Sir TREVOR LAWRENCE, Bart.—A singular old species with greenish flower, having nearly black fringed labellums.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., in the Chair; and Messrs. W. Wilks, W. Poupart, E. Shaw Blaker, A. H. Pearson, Alex. Dean, S. Mortimer, Geo. Kelf, C. Herrin, Geo. Wythes, F. Q. Lane, Geo. Reynolds, E. Beckett, and Geo. Norman.

Messrs. HARRISON & SONS, seedsmen, Leicester, showed a collection of certain kinds of choice vegetables including tubers of Potatoes Up-to-date, Satisfaction, Schoolmaster, and Duke of York. The samples of the last-named variety were especially good. There were also Lyon, Conqueror, and Leicester Hero Leeks; Early Market, St. Valery, and Intermediate Carrots; Lord Keeper, and other popular Onions; Harrison's Reindeer Kale, a very choice form judging from its appearance; Magnum Bonum Parsnips, &c. (Silver Banksian Medal).

Mr. WILL TAYLER, Osborn Nursery, Hampton, Middlesex, exhibited bunches of Reine Olga Grapes ripened out-of-doors. The berries as shown were extremely pale red in colour, and upon tasting them we thought them to be of poor quality so far as the dessert is concerned (Vote of Thanks).

From Sir W. WEETMAN PEARSON'S garden, at Paddockhurst, Sussex (gr., Mr. A. B. Wadds), was shown a cluster of fruits of *Musa Cavendishi* in a green state. It was not a remarkable bunch, but if it should encourage other gardeners to cultivate a few Bananas in their houses, their employers would probably appreciate the fruits, for examples grown in suitable conditions at home are very superior to imported fruits. The fruits shown were from a plant grown in a 22-inch tub.

Cardoons were shown by Miss BRETTON, Forest End, Sandhurst (gr., Mr. Handley), and an Apple named *Caradoc Scarlet*, by Mr. CADDICK, Caradoc Gardens, Ross (gr., Mr. J. N. Roe). A number of fruits of this Apple were shown; they were very highly coloured, of poor quality, and already soft. The variety is said, however, to keep in condition until March, and the committee requested that it be shown before them again in February.

Some fine fruits of stewing Pear Double de Guerre were shown by Mr. Mark Mills, gr. to FRANK LLOYD, Esq., Coombe House, Croydon. They are much more attractive in appearance than the Old Catillac, but we are not able to say if they are more valuable for purposes of cooking. The fruits would certainly keep good a considerable time (Cultural Commendation).

Some slightly-tinted Onions, said to be from a cross between Cranston's Excelsior and Veitch's Main Crop, shown by Mr. STADMAN, Cuddington Hall gardens, Newark-on-Trent, did not find any favour with the committee.

Awards.

Cabbage, Dobbie's Selected Winningsstadt.—This form shows a great improvement upon the type. The plants are dwarfier, and the hearts are exceptionally solid, and have firm, close tops, just the shape of a Filbert. There were two dozen pretty heads shown, from seeds sown on April 3, and the plants had probably been 12 to 15 inches high. From Messrs. DOBBIE & CO. (Award of Merit).

Pear Beurri du Buisson.—This is a long, gradually tapering fruit, generally in excellent condition at Christmas-time. The eye is set in a moderate cavity with slightly angular sides, and a rather short, thick stem is joined to a protuberance rather than in any cavity. The skin is much speckled over the whole surface of the fruit. Flavour delicious, and flesh soft and melting. It is described as a good bearer, and as making slow growth upon a Quince stock. Though not so well known as *Doyenné du Comice*, which only received an award at the last meeting, *Beurri du Buisson* is by no means a new Pear. Mr. W. H. DIVERS, gr. to the Duke of Rutland, Belvoir Castle, Grantham, exhibited very nice specimens (First-class Certificate).

The Lecture.

MISTAKES IN FRUIT CULTURE.

A lecture upon some of the common mistakes made by fruit cultivators was read by Mr. Geo. Bunyard, V.M.H. He commenced by describing the very injurious practice of planting the trees too deeply, and proceeded to recommend that trees upon the Paradise or Quince stocks should be inserted in the ground to a point 1 inch beneath the junction of scion with stock. In cases of trees upon the free stock, the roots should be placed as near to the surface of the soil as possible, and never inserted deeper than they were in the nursery; the usual guide—the earth mark—being again recommended as a safe one to planters obtaining young trees from a nursery. Wall trees planted in autumn should not be secured permanently to the wall until the following April, or the roots will not be capable of sinking in exact proportion with the newly disturbed soil. A timely reminder was given in respect to the frequent applications of top-dressings, which may result in the roots of the trees being buried too deeply. In order to prevent this, some of the surface soil should occasionally be removed before affording fresh soil.

When planting orchards, said Mr. Bunyard, the trees should be planted a little above the level of the ground, as they will sink. Fruit-trees against walls frequently suffer injury, owing to the cultivation of vegetable crops in the borders. The treatment of the soil for the vegetable crops results in it being kept in a loose condition, and frequently enriched with manure, both of which conditions are opposite to those necessary to produce fruitful trees with well ripened wood. To lessen the evil, a broad path not less than 3 feet wide should be retained under the wall, and maintained in a firm condition.

The watering of wall-trees was also alluded to, and it was

pointed out that much of the rain that falls has little effect upon the soil immediately under a wall. As a rule, wall-trees are not afforded water so often as they require it.

Another mistake is to crowd *Chrysanthemum*-plants into Peach-houses, as the frequent watering, and the manure-water added to them, is detrimental to the fruit-trees. Mr. Bunyard then commended the old-fashioned custom of removing the trees from walls in the autumn, and then cleaning the walls and white-liming them, afterwards dressing the trees with an insecticide before re-nailing them to the wall. He had seen a Nectarine-tree so treated yield seventy dozen and more fruits.

Proceeding, Mr. Bunyard said that summer pruning or stopping should not be commenced before August. Over-pruned trees, such as are seen in villa gardens, may be made fruitful by allowing them to grow naturally for a couple of seasons, subsequently regulating them with moderation.

A common mistake in respect to root-pruning is that the work is not sufficiently early. It should be done before the leaves have fallen, and the trees will then bear crops the following season. A caution was given against over-pruning and stopping, and depletion of foliage. The thinning of fruits, too, said the lecturer, was often deferred until too late, or omitted altogether; thus, this year there were thousands of bushels of Apples, in Kent for instance, that would realise only from 6d. to 1s. a bushel, because they are small.

Late-ripening Apples were often gathered before they are fully mature, and they then fail to keep well, but become spongy and lose their flavour. Summer Pippin is an instance of such late-ripening varieties. Mr. Bunyard said that 16 of frost would not harm such Apples. Early Pears, on the contrary, should be gathered before they are ripe, and early Apples are not good unless consumed soon after gathering. It was no use to use strong manures with a view to atoning for omissions and mistakes in respect to planting and thinning of fruits, or mulching of soil.

It was a mistake to purchase trees from fruits seen at an exhibition. Such fruits were not good guides, and it was not wise, said Mr. Bunyard, to plant largely of varieties that happened to succeed in a particular year. For five years the summer had been more or less exceptional, and many rather shy varieties had fruited well. Plant rather, the lecturer added, such varieties as may be expected to bear a crop in a poor season.

One more "don't." It is this. Do not postpone labelling your trees received from a nursery until the labels that came with them have become illegible. That this is done sometimes, and that Mr. Bunyard's hint is called for, we are sure, for among the large number of fruits sent for naming to the office of this journal, there are occasionally varieties that have been in commerce only a few years, and we wonder how trees can have been distributed, and the cultivators have confounded their identity in so short a time!

BISHOP'S STORTFORD HORTICULTURAL.

NOVEMBER 13.—The second annual exhibition of *Chrysanthemums*, fruit, and vegetables, was held in the Great Hall, Bishop's Stortford, on the above date, and proved a great advance on last year's exhibition.

Messrs. RIVERS & SON, Sawbridgworth, sent, but not for competition, a collection of Apples and Pears, both on trees in pots and fruit in dishes, which helped the general effect considerably. Groups of *Chrysanthemums* were not numerous, and the plants shown were somewhat tall; foliage plants were used as an edging to the groups. Mr. G. Beech, gr. to J. BARKER, Esq., The Grange, Bishop's Stortford, took the leading place in the group class; and was followed closely by Mr. D. J. Richardson, gr. to Sir J. BLYTHE, of Blythwood, Stansted, Essex.

For twenty-four Japanese blooms, distinct varieties, Mr. G. Barker, gr. to H. A. BLYTHE, Esq., Stansted House, was 1st, having notable examples of the Madame Carnot strain, Mrs. Chas. Keyser, rarely seen on a show-board, was also beautiful; and the size, form, and colour of *Etoile de Lyon* was perfection itself. Mr. A. Jefferies, gr. to JOHN BALFOUR, Esq., Moor Hall, Harlow, was a close 2nd; his best blooms were Madame Carnot, Australia, H. J. Jones, superb in size and colour; Mrs. T. A. Compton, and Hairy Wonder.

In the members' class for twelve Japanese varieties, distinct, Mr. BARKER again was 1st, being followed by Mr. A. JEFFERIES, 2nd. For twenty-four incurveds, open, 1st, Mr. BARKER, with blooms apparently undressed; 2nd, Mr. Lodge, gr. to Mrs. MENER, Bishop's Stortford. For twelve incurved blooms, Mr. W. HARRISON, was 1st for very good blooms, much better than those in the twenty-four class; 2nd, Mr. LODGE.

Much interest was centred in the single bloom class in which Mr. A. JEFFERIES was 1st for a superb specimen of Edith Tabor, faultless in size, colour, and form, as may be easily seen when it beat huge specimen blooms of Madame Carnot from Mr. BARKER, and G. J. WARREN from Mr. Fulford, gr. to A. G. SANDEMAN, Esq., Presdals, Ware, who followed in the order of the names given.

For four vases containing five flowers of distinct varieties, 1st, Mr. HARRISON. For twelve bunches of singles, 1st, Mr. P. JOHNSON; and 2nd, Mr. J. RICHARDSON. For six trained specimens, 1st, Mr. SKELTON, with pyramidal plants.

Fruit.—Mr. SKELTON was 1st with fine bunches of Muscat of Alexandria and Gros Maroc; and Mr. G. BEECH 2nd in the Muscat class; and Mr. J. RICHARDSON 2nd in the Black Grape class with large, well finished Black Alicante. Apples, Pears, and vegetables were well shown.

The arrangements were admirably carried out by Mr. W. Smith, the Hon. Secretary, a gentleman who is an enthusiastic amateur, much interested in the Auricula, and who has a collection of 400 of these plants.

DEVIZES CHRYSANTHEMUM.

NOVEMBER 13.—This exhibition commends itself to many from the fact that it is annually held in the Corn Exchange, Devizes, in connection with a Bazaar, in support of the Town Benevolent Society. One half of the Exchange is occupied by handsome flowers, the other half by stalls of charitable ladies, who sell fancy goods. The show is under the management of Mr. THOMAS KING, of the Castle Gardens, and it is well supported; the prizes are good, and draw to the Wiltshire town some of the leading growers of the day.

Groups of *Chrysanthemums*, arranged in circles, occupied the centre of the space devoted to flowers; that from Mr. H. Clark, gr. to C. E. COUSINS, Esq., M.P., Roundway Park, was a bold and striking one, the growth good, and the blooms very fine.

A class for 24 incurved *Chrysanthemum* blooms brought a very fine collection from Mr. W. HOGGS, the Gardens, Fetcham Park, Leatherhead, which was awarded the 1st prize, and contained very fine examples. 2nd, Mr. G. HUNT, the Gardens, Ashted Park, Epsom.

With twenty-four blooms of Japanese, distinct, Mr. F. S. VALLIS, Bromham Fruit Farm, Chippenham, was 1st, with finely developed examples of Mrs. Mease, Mrs. Coombs, Lady E. Clark, Madame J. Lewis, Louis Remy, Lord Salisbury, Australian Gold, Madame Cadbury, Simplicity, Nellie Pockett, &c. Mr. C. J. SALTER was 2nd.

Mr. VALLIS was also 1st with twelve blooms of incurved Japanese in not fewer than six varieties, and Mr. C. J. SALTER 2nd.

The best twelve blooms of Japanese white and yellow were staged by Mr. T. PALLIS. He had G. J. Warren, yellow, and Madame Carnot and Madame J. Lewis, white.

Anemone flowered *Chrysanthemums* were shown in twelves, Mr. W. STROGHELL was 1st, Mr. H. CLARK 2nd.

An extremely pleasing class was that for a basket of hardy autumn foliage and berries, about two dozen were staged, and they make quite an attractive show of themselves.

WINCHESTER.

NOVEMBER 13, 14.—The annual show of the Winchester *Chrysanthemum* Society was held in the Guildhall, Winchester, on the dates named, and resulted in very admirable displays of blooms and plants.

GROUES—ARRANGED FOR EFFECT.

In this competition Mr. G. Street, gr. to the Rev. Dr. FLARON, Winchester College, was 1st with plants, dwarf of habit and well-turmed with excellent blooms; Mr. R. Stone, gr. to the Ven. Archdeacon HAIGR, The Close, Winchester, was a good 2nd. Plants suitable for conservatory and general decorative purposes were numerous. In the class for six, Mr. G. Adams, gr. to Col. DICKINS, Edge Hill, Winchester, was 1st, well-grown dwarf examples of Miss Nellie Pockett and Mrs. Mease being his best flowers; Mr. H. P. Pitman, gr. to H. SEWELL, Esq., Oakwood, Otterbourne, 2nd, with good plants.

For six of any white variety there were five competitors, and Mr. ADAMS, with immense plants of Ma. Perfection and Midle. Therese Rey was 1st; 2nd, Mr. E. Astriege, gr. to W. BARRON SIMMONDS, Esq., Abbots Burton, Winchester, with handsome plants.

In the class of six plants for yellow-flowered varieties there was brisk competition, and Mr. ADAMS was again successful in taking the 1st prize with popular varieties: Mr. Cousins, gr. to E. H. BUCKLAND, Esq., being 2nd, also with fine examples.

The winners in the class for single specimens, 1st, Mr. A. TAYLOR, Bar End, with a most creditable example of Golden Christine, as he was likewise for a well-flowered standard plant of Niveau.

Miscellaneous plants arranged for effect formed a feature of the show, Mr. E. Long, gr. to F. C. BIRCH, Esq., Clovelly, Winchester, was 1st for a group that left little to be desired on the score of quality in the plants and good grouping; and Mr. PITMAN 2nd.

There was a good display made with Chinese Primulas, and the 1st prize fell to Mr. G. ADAMS, for a dozen well-grown examples of double and single flowered varieties; 2nd, Mr. E. LONG.

Cut Blooms.—These made a meritorious display. In the Class for forty-eight distinct, five competitors appeared, Mr. Neville, gr. to F. W. FLUHR, Esq., Twyford, Winchester, was awarded 1st prize, for a representative collection of incurved and Japanese varieties.

In the Japanese section there were excellent blooms of Mrs. Mease, E. Molyneux, Lady Hanham, Mr. J. Carrington, Mrs. Coombs, Madame Carnot, Mrs. J. Lewis, Mrs. Weeks, Sir H. Kitchener, and Miss A. Byron.

Amongst the incurved varieties, Mrs. R. C. Kingston, Hanwell Glory, Mrs. H. J. Jones, C. H. Curtis, Irene, Golden Empress, Topaze Orientale and Golden Queen of England were notable blooms. Mr. G. Hall, gr. to Lady LOUISA ASHBERTON, Melbourn Park, Romsey, was a good 2nd in this class.

In the class for twenty-four Japanese the competitors numbered five, and Mr. J. Wasky, gr. to J. B. TAYLOR, Southfield Manor, Basingstoke, was 1st for a well set up lot of flowers. Conspicuous amongst them were Mrs. J. W. Banks.

Mary Molyneux, Mrs. Mease, Lady Ridgway, Mrs. G. Carpenter, Lord Ludlow, and E. Molyneux; Mr. G. Street was a close 2nd.

Six competitors entered for the twelve incurved class, with the result that Mr. NEVILLE was 1st, his flowers being even in size and the varieties leading ones.

Mr. NEVILLE was likewise adjudged 1st for twelve blooms of incurveds in four varieties, his blooms being very commendable.

Mr. Dawes, gr. to Mrs. OCTAVIE, Rosecroft, Hambledon, was 1st for twelve Japanese varieties distinct, the examples being massive and bright looking. Mr. Hunt, gr. to J. Moss, Esq., Fern Hill, Blackwater, was 2nd in this competition.

Twelve white-flowered varieties occasioned a severe contest, resulting in Mr. WASKY being placed 1st. His best were Elsie Teuchmann, Madame Henry, Madame Carnot, and Mrs. J. Lewis; Mr. NEVILLE was 2nd.

Mr. NEVILLE was 1st for twelve yellows, a four flowered varieties, and Mr. HUNT a close 2nd.

Pompons were well shown. Local classes were well filled. In the table decoration section open to ladies only, there was brisk contest; as was the case in the classes devoted to fruit and vegetables.

Messrs. E. HULLIER & SONS staged a good collection of Apples in large quantities and of much attractiveness.

FOLKESTONE CHRYSANTHEMUM.

NOVEMBER 14.—The fifth exhibition under the auspices of the Folkestone *Chrysanthemum* Society, was opened by Sir Ed. Sassoon, Bart., M.P.

The exhibits, as a whole, were an advance even on those of last year. There were several points in it worthy of special commendation, apart from the splendid exhibition of *Chrysanthemums*. For instance, the show of vegetables comprised some fine specimens. The groups of flowering and foliage plants in pots were extremely beautiful, especially that of Messrs. C. A. CLARK, of Dover, who took 1st prize, Lord Radnor's gr. Mr. Kennett, taking 2nd honours. At the end of the hall there were two displays, for which the judges awarded First-class Certificates of Merit. One was a floral and fruit display by Mr. J. Wilson, of Sandgate R. ad. Large photographs of Sir Edward and Lady Sassoon, framed in *Chrysanthemums*, formed a conspicuous feature in the collection, which demonstrated the many decorative purposes to which the Japanese autumn flowers can be put; and there were also several dinner table decorations. At the stall of Mr. MOUSE, a life size portrait of the Marquis of Salisbury was a prominent feature. The flowers were exceedingly beautiful. *Chrysanthemums* were shown in numerous classes very finely, and there were competitions for fruit, &c.

CHELTENHAM ROOT, FRUIT, GRAIN, AND CHRYSANTHEMUM.

NOVEMBER 14, 15.—Ceres and Flora joined hands at Cheltenham, and filled not only the Victoria Hall, but all the available ante-rooms upstairs and down with the products of the spade and plough. The town appeared to be full of farmers attracted to see the very fine farm produce in competition for the special prizes given by Messrs. STATION & SONS, WEBB & SONS, JEFFERIES & SON, WHEELER & SON, and by several private donors. But *Chrysanthemums* overflowed; there were trained plants, plants in groups, cut flowers, bouquets, &c., illustrating methods by which the flower can be utilised for decorative purposes.

For a collection of six trained plants of incurved varieties, Mr. BALLS, gr. to H. G. BARNER, Esq., Byne House, was 1st. His leading specimens were Guinesey Nugget, Princess Beatrice, Mrs. H. Molyneux and Madame Ferlat. Mr. JAMES PHILIP, Pitville Nursery, was 2nd.

Mr. BALLS was also 1st with six Japanese; Mr. E. CREEK, Dewerstone, was 2nd.

Mr. CREEK had the best four trained specimens; Mr. W. MOORMAN was 2nd.

Mr. BALLS had the best specimen, an excellent one of Madame Carnot.

A Silver Cup and a money prize of £6 was offered for a group of plants, and Mr. Lusty, gr. to Colonel ROGERS won it for the third time, so that the cup is now his own property. It was a bold and striking group, the flowers of fine quality. Mr. Maddocks, gr. to J. HERBIE, Esq., Cowley Manor, was 2nd. Plants of small size for table decoration were also shown in sixes.

CUT FLOWERS.

Incurved blooms were shown in good character; the best twenty-four came from Mr. J. Apple, gr. to B. W. MEATH, Esq., Hasfield Court.

With 12 blooms, Mr. F. DAVIS, Pershore, was 1st, having in good character Topaze Orientale, Mr. R. C. Kingston, Lucy Kendall, Ma. Perfection, Ernest Cannell, C. H. Curtis, Madame Ferlat, Miss M. A. Haggas, &c.; Mr. J. MADDOCKS was 2nd.

The Japanese blooms were more rous, and in some instances particularly fine. The best came from Mr. Martin, gr. to T. W. SWINFURN, Esq., Winchester, who had Mrs. Barkley, Ma. Perfection, Royal Standard, M. Cheron de Leclé, R. Hooper Pearson, Master E. Tucker, Mme. Carnot, T. Carrington, Mrs. T. A. Compton, Julia Scaramanga, Sunstone, Mrs. Mease, M. Parkinson, Emily Towers, H. J. Jones, very fine; Hairy Wonder, Mrs. Coombs, &c. Mr. LUSTY was 2nd.

A special class for 18 incurved Japanese in 6 varieties

brought several collections. Here Mr. MARTIN was again 1st, and Mr. LESTY 2nd.

There was an excellent competition with 13 blooms of Japanese distinct, Mr. May, gr. to H. O. LORD, Esq., Lilybrook, taking the 1st prize with some grand blooms. Mr. Lusty came 2nd.

Mr. F. DAVIS came 1st with twelve excellent blooms of Japanese. Mr. T. Butler, gr. to M. L. EVANS, Esq., was a close 2nd.

Here, as elsewhere, classes for specimen blooms on long stems shown in vases has been introduced, and in the class for six varieties, three of each, Mr. MAY was 1st with leading varieties in good character, and Mr. MARTIN was 2nd.

In the way of decorations, there were classes for button-holes, sprays, and bouquets for the dinner, all arranged with Chrysanthemums.

FRUITS, &c.

Apples and Pears were finely shown, and were brilliant in colour generally. The best twelve dishes of culinary Apples came from Mr. A. JAMES, gr. to the Rev. GEO. COVENTRY, Woolstone Rectory, who had very fine samples of Kentish Fillbasket, Warner's King, Gascoigne's Scarlet, Bramley Seedling, Peasgood's Nonsuch, Twenty Ounce (a large and showy variety), Golden Noble, Emperor Alexander, &c. Mr. T. SPENCER, gr. to H. MOFFATT, Esq., Goodrich Court, Ross, was 2nd.

Mr. W. J. SHELTON, Pershore, was 1st with four dishes, all very fine; and Mr. J. AYLIN 2nd.

Dessert Apples were also of good quality, though generally smaller than is usual. Mr. H. C. MOFFATT, Ross was 1st, the leading varieties Red Winter Reineette, Margil, Worcester Pearmain, King of Tomkins County, Ribston, Cox's, King, and Melon Pippins, Wealthy, Blenheim Orange, &c. Mr. A. JAMES was a close 2nd with much the same varieties.

With four dishes, Mr. W. J. SHELTON was 1st, and Mr. W. FANSTOWN 2nd.

Pears were numerous shown. Mr. MOFFATT had the best twelve dishes; Mr. W. Childs, gr. to the Earl of COVENTRY, Cromie Court, was 2nd.

There were classes also for black and white Grapes.

The special prizes offered by some of the leading seed houses, in addition to other classes, brought a good display of Vegetables, and they filled a good space of tabling. Messrs. WALKER and STAMPE, the hon. secretaries, may be complimented on their excellent arrangements.

HULL CHRYSANTHEMUM.

NOVEMBER 14, 15.—The annual exhibition, held as usual in the Artillery Barracks, was not quite so large as usual. The competition in the classes for groups of plants, and in some of those for cut blooms was not so keen, but the quality of the exhibits right through the show was quite up to the usual high standard at Hull. A special feature of this show was the table decoration, a room being specially set apart for this section, where all the exhibits were judged by artificial light. It was a pretty feature.

The principal class for cut flowers was that for twenty-four incurved, in not fewer than eighteen varieties. Mr. Higgs, gr. to J. B. HANKEY, Esq., Fetcham Park, Surrey, was an easy 1st, with large handsome blooms well staged. The most noticeable varieties were Duchess of Fife, C. H. Curtis, Hanwell Glory, Ralph Hatton, Islene, Countess of Warwick, Mrs. G. Williams, Miss A. Hills, and Globe d'Or. Mr. W. Mease, gr. to A. TATE, Esq., Downside, Leatherhead, was 2nd.

In the class for twenty-four Japanese blooms, Mr. MEASE was the only exhibitor. He staged very fine blooms of M. Chénon de Leché, Edith Dashwood, J. R. Upton, Mrs. Weeks, Mrs. Barkley, Mermad, E. L. Curtis, and Mr. J. Carrington.

For six Japanese, any one variety, there was brisk competition. Mr. P. Walker, gr. to Mrs. STRACEY CLITHEROE, Hotham Hall, Brough, was the most successful, with a grand display of M. Chénon de Leché. This stand too contained the premier Japanese bloom in the show.

Anemone flowered varieties were well staged. For twelve in not fewer than six sorts, Mr. Hanson, gr. to S. L. HALLANE, Esq., Coltman Street, Hull, just succeeded in winning the premier award with high class examples. Mr. Masou, gr. to Col. A. K. DREW, Kirk Ella, being 2nd.

Pompous and Anemone-Pompous made a pretty class, arranged in cups or vases in a space of 3 feet each way, any foliage and grasses being added. Six competed. Mr. J. W. BEARPARK, Great Thornton Street, Hull, was placed 1st, with good quality blooms lightly arranged. Mr. A. DREWERY, gr. to Mrs. F. B. MOORE, Harland Rise, Cottingham, 2nd.

Even prettier were the single-flowered varieties set up in the same way, as many as eight exhibitors competing. Mr. C. J. Flower, gr. to R. HODGSON, Esq., Westwood, Beverley, took 1st prize, with high class blooms arranged in vases; Mr. HANSAM being a close 2nd.

In the local classes there was good competition and excellent results. For eighteen incurved, for which a Silver Cup was offered along with the 1st prize, the blooms staged were distinctly creditable. Mr. T. DOWN, gr. to H. S. CONSTABLE, Esq., Wassend, Hull, was adjudged the winner. For twelve incurved, Mr. R. WALKER secured the leading award.

The class for eighteen Japanese blooms was won by Mr. T. DOWN; and that for twelve blooms by Mr. H. THOMPSON, gr. to C. J. RINGROSE, Esq., Cottingham Grange, Hull.

PLANTS

were capitally represented. For a group of Chrysanthemums, interspersed with foliage plants arranged for effect, in a space of 100 square feet, the 1st prize being a valuable challenge

Vase and £10, Mr. G. C. COATES, gr. to W. WHEATLEY, Esq., Anlaby Road, Hull, took 1st honours for an admirable arrangement of large-flowered Chrysanthemums, and suitable foliage plants. Mr. V. WATERHOUSE, gr. to W. T. OWBRIDGE, Esq., Cheney Garth, Cottingham, 2nd. The 1st prize for a decorated drawing-room mirror panel was secured by Mr. COATES; Mr. J. FOSTER, jun., Cottingham Road, Hull, 2nd.

In the specimen plant classes, Mr. H. THOMPSON won the premier award, with well flowered examples fully 4 feet in diameter; as also he did for three standards, in both cases depending mainly upon the "Rundle" family.

A feature is made at Hull of bush-grown plants, and Mr. ROBERT THIRSK, Beverley, secured not only the leading place in this class, but also that for six, and for three "cut back" plants, in all cases staging meritorious examples.

DINNER TABLE DECORATIONS.

For a decorated circular dinner table completely laid for dessert for six persons, there were no fewer than seven competitors, making a large display. Miss PUDSEY, 6, Crown Terrace, Anlaby Road, Hull, won 1st prize, with a bright arrangement in which Chrysanthemum Source d'Or played a prominent part.

RUGBY CHRYSANTHEMOM.

NOVEMBER 14, 15.—The fourteenth Annual Show was held in the Town Hall. The plants, groups, Fruit and Vegetables were above the average, but there was a distinct falling off in cut blooms.

For a group of Chrysanthemums arranged in a space (semi-circular) of about 50 feet square, E. A. SCOTT, Esq., The Lawn, Rugby (gr. to Mr. Man'son), was 1st with a nice group, conspicuous being such varieties as Lady Hanham, Etoile de Lyon, &c.; the 2nd place was taken by Mr. E. ANDREWS, Oxford Street, Rugby.

Mr. E. A. SCOTT was also 1st for four trained plants, the varieties being Lady Hanham, Chevalier Donage, Vivand Morel, and E. Becket.

For twelve Primulas Mr. SCOTT was 1st with some nice plants of Primula Stellata.

P. A. MUNTZ, Esq., Dunsmore, Rugby (gr. to Mr. Blakeway), was 1st for twenty-four cut blooms of Chrysanthemums, Japanese varieties, having Vivand Morel, Mr. Louis Remy, Master F. Tucker, Mr. W. Mease, Ella Curtis, Mons. Hoste, &c.

Mr. FENBY had the best basket of Chrysanthemum blooms, and Mr. Blakeway the nicest arranged basket of natural berries and foliage. Mr. Blakeway also led the way for a vase of six Japanese blooms, distinct.

There was a good display of vegetables and fruit staged; the chief winners being Mr. BLAKEWAY and Mr. SCOTT for Grapes; and Mr. BLAKEWAY, Mr. DANIELS, Mrs. CORNY for Apples and Pears; and for Vegetables, Mr. BLAKEWAY and Mr. WHITEHEAD; Mr. WHITEHEAD'S Carrots being particularly good.

There was also a Table of Fruit and Flowers for Sale on behalf of the Royal Gardeners' Orphan Fund, which last year realised £9. Other societies might take this hint. H. K.

BRISTOL CHRYSANTHEMUM.

NOVEMBER 14, 15.—Since the destruction (some three years ago) of Colston Hall by fire, this Society, owing to not having satisfactory accommodation for holding its shows, has not been so prosperous as formerly. Nevertheless, a show in every way good was held on the above dates in the Victoria Rooms, Clifton.

The exhibits generally, with the exception of Grapes, were up to the usual standard of excellence, the groups and cut blooms of Chrysanthemums being leading features. Bouquets, wreaths, sprays, and other floral devices were composed of the choicest materials, and arranged with skill and taste. Specimen Ferns, stove plants, Orchids, and table plants were also present in excellent condition, while Apples and Pears were of good quality. The Bristol Amateur Horticultural Society held its seventh show in conjunction with the above and it proved to be a success. Unfortunately the addresses of exhibitors were omitted from the prize cards.

PLANTS.

For a group of Chrysanthemums in a space of 50 square feet, J. C. GODWIN, Esq. (gr. to Mr. Cullock), was 1st, with a beautifully arranged lot of plants, carrying very large, fresh blooms and good foliage, edged with Adiantum Fern; W. A. TODD, Esq. (gr. to Mr. Sutton), being a good 2nd.

Of miscellaneous plants on a space of 10 feet by 5 feet, there were three exhibitors, Major DOHERTY leading with one composed chiefly of Callas, Poinsettias, Salvia, Cat-tleyas, Cyrtipediums, Palms, and Codieums, edged with Maidenhair Fern; W. K. WAIT, Esq. (gr. to Mr. Shelton), being a good 2nd.

Orchids.—These were splendidly shown, R. W. RICKARD, Usk, Mon., and CARY BATTEN, Esq., being leading exhibitors.

CUT BLOOMS.

For thirty-six blooms of Japanese, Mr. DRAKE, of Cardiff, was 1st amongst four exhibitors, having amongst his best specimens, Nellie Pockett, Mrs. Mease, Mons. C. de Leché, Mrs. Coombes, Mrs. W. H. Lees, and Mrs. Barkley, a grand bloom Mr. G. RUNNACLES was a good 2nd; and Mr. F. S. LILIS, who secured with one of his blooms (G. J. Warren) the National Chrysanthemum Society's Silver Medal for the best bloom in the show, was 3rd.

Mr. DRAKE also secured with his thirty-six blooms a special prize given for the best lot of blooms staged in any of the classes.

Twelve blooms, Japanese distinct, were best from D. G. TAYLOR, Esq. (gr. to Mr. Coote).

For twelve blooms of Japanese incurved varieties, D. G. TAYLOR, Esq., was again 1st with a good even stand, having amongst others, Oceana, Madame G. Henry, Jubilee, Modestum, and Australian Gold.

There was a remarkably good show in a class for twenty-four blooms, incurved varieties, ten exhibitors staging in it, the premier place being secured by Mr. RUNNACLES, with Madame Ferlat, Mrs. H. J. Jones, Mr. A. Harvey, Lady Isabel, Duchess of Fife, C. H. Curtis, and Lord Alcester amongst his best; Mr. DRAKE followed closely.

There was also a class for twenty-four blooms in eight varieties on long stems, three of each grouped together and arranged with ornamental foliage, or small plants. This class secured close competition. Mr. HACK, with fine blooms interspersed with Croton sprays, and fringed with Maidenhead Fern, was placed 1st; the 2nd position being taken by W. A. TODD, Esq.

NON-COMPETITIVE EXHIBITS.

Messrs. PARKER & SON, Bristol, staged a large collection of floral devices.

Messrs. GARRAWAY & Co., Durdham Down Nurseries, Clifton, staged 100 dishes of good, highly-coloured Apples.

Mr. GODFREY, Exmouth, exhibited a table of Carnation and Chrysanthemum blooms in fine condition.

COBHAM CHRYSANTHEMUM.

NOVEMBER 14, 15.—A Chrysanthemum Show was held on the above dates, at the Meadow Room, Cobham, Kent. The show was a great success, and attracted a number of people; and the quality of the flowers was exceptionally excellent. Amongst the groups of pot Chrysanthemums was a fine exhibit from Holywell Park. Another group from Mrs. TWEDDELL, Meopham Court, consisted of very good plants, well arranged, and contained some fine examples of Good Gracious, and Charles Davis. Mrs. STEVENS sent a pretty group from the Parsonage, Cobham, and amongst others were groups from Camer Park, Cobhambury, and Owletts. Miss EASTERBROOK, Fawkham, sent two artistically arranged baskets of flowers, for which she is famous in the neighbourhood, and two vases. Amongst the cut blooms, Mr. P. WATERRE, Fawkham, exhibited 36 blooms of Japanese varieties of fine quality and finish. Dr. GOLDING BIRD showed among others, good blooms of Simplicity, a much admired white bloom. Mr. C. YEOMANS, Meopham, staged 60 fine Japanese blooms in vases, interspersed with autumn foliage and pompoms. The exhibits from the cottagers were very pretty, but all more or less suffered from being too tightly bunched. Some excellent Grapes, fruit and vegetables were shown by Dr. GOLDING BIRD, Mr. DUNHAM and others. The sum of £5, the amount of the surplus proceeds, has been handed to Maj.-Gen. EDMANDES, Secretary to the Gravesend branch of the Soldiers and Sailors Association.

POTTERS BAR CHRYSANTHEMUM.

NOVEMBER 15.—The first annual autumn Chrysanthemum, Fruit, and Vegetable Show of the Potter's Bar and District Horticultural Society was held in the Village Hall, Potter's Bar, on the above date, and it was, from the exhibitors' point of view, a successful one, about 150 entries having been received. The weather, unfortunately, for a first show more especially, was very unfavourable, interfering greatly with the attendance of the public. The weather, however, detracted nothing from the exhibits, which were very good throughout, the vegetables being particularly good. This Society, it may be stated, make both their summer and autumn shows more of a cottagers' than a gardeners' exhibition, though the exhibits from the latter were of no mean order.

The groups of Chrysanthemums which covered a space of 6 feet by 5 feet were very attractive. The 1st prize fell to Mr. C. KITNEY, gr. to E. MATHEWS, Esq., with plants possessing good blooms, admirably arranged, with the colours nicely blended; 2nd, Mr. Charles Gardener, gr. to S. G. SHEPPARD, Esq., "Leggatts," who also had a very nice collection, but lacking the evenness and finish of those in the premier group.

Only two cutbloom classes were provided for gardeners, viz., for twenty-four and twelve Japanese of not fewer than eighteen and nine varieties respectively. The former was won by Mr. H. JOY, gr. to Mrs. DORE, "Stormont," who had a very good, even lot of blooms, the best of which were Madame Carnot, Mrs. Mease, Lady Hanham, Lady Mayfair, Miss Nellie Pockett (pretty), and Royal Standard. In the class for twelve blooms Mr. KITNEY was 1st with two fine pairs of Madame Carnot and Mrs. Mease.

Fruit, &c.—Apples and Pears were well shown by Mr. GARDENER and Mr. JOY. The best collection of vegetables came from Mr. GARDENER, and much good produce was noted in the single dishes of Beet, Onions, Parsnips, &c.; and there were about sixteen competitors in each. Messrs. CUTHRUSH & SON, nurserymen, of Highgate and Barnet, contributed to the display by showing retarded Lilies of the Valley, Spiraeas, Bouvardias, Begonia Gloire de Lorraine, Pernettyas, and Palms. The Committee and the Hon. Sec., Mr. E. Mathews may be congratulated on achieving in this, the first show a most creditable display of flowers, fruit, and vegetables.

COLCHESTER ROSE AND HORTICULTURAL.

NOVEMBER 15.—Though this is generally termed the Chrysanthemum show, there are few autumn shows where fruit and vegetables are shown so well or so largely. The show this year was excellent. The Hon. Secretary, Mr. G. Egerton-Green, is also Mayor of the Borough this year, and he is ably assisted by a good committee. Much of its success as regards the fruit classes is owing to the Rev. Dr. Bartrum, who largely contributes to the prize list, and stipulates that all fruit must be properly named, and that separate classes are made for leading kinds of Apples and Pears.

Chrysanthemums were shown well in the open classes, which contained some very fine blooms, and the groups were above the average, the plants being dwarfier and less closely arranged than they are sometimes seen. The premier prize for large groups was secured by Mr. Kettle, gr. to H. G. Egerton-Green, Esq.; 2nd, Mr. Clayden, gr. to General Larpent.

For smaller groups, prizes were secured by Messrs. ARNOLD, SCOTT, and DOUBLE.

The 1st prize for plants suitable for decoration was awarded to Mr. GREEN.

Cut blooms were very good. Mr. R. C. NOTCUTT, Ipswich, was 1st for twenty-four blooms; Mr. P. MARRIAGE, Burnfield Mills, being a very close 2nd.

For the best twelve Japanese, Mrs. GRAY was 1st, also obtaining the Silver Medal given by Mr. H. J. JONES.

For incurved blooms, Mrs. GRAY led, Messrs. GREEN and MARRIAGE following in the order named.

There was a class for blooms in vases, and Messrs. GREEN, MAY, and OSBORNE were the most successful.

In the open classes, Messrs. EVANS, ARNOLD, DENNY, CHAPMAN, BUNTING, and LEVETT were the most successful; the Medals of the National Chrysanthemum Society going to Mrs. GRAY and Sir M. E. GRANT DUFF, and the Certificates to General LARPENT and Sir M. E. GRANT DUFF for the best single blooms.

FRUIT occupied a large space. The Hon. W. LOWTHER, Campsea Ashe, had the best black Grapes; Gen. LARPENT 2nd. Mr. A. H. OSBORNE had beautiful fruits of Muscat of Alexandria.

For six dishes of dessert Apples, Mr. GREEN was 1st; Mr. O. G. ORPEN being a good 2nd.

For the best dessert Apples, Cox's Orange, Ribston, or Allington Pippin, Messrs. GREEN, GRAY, and R. W. WALLACE secured the awards, the latter having the best fruits of Allington Pippin we have seen this season.

For other dessert varieties, Messrs. ORPEN, MOORE, and Dr. BARTRUM were most successful.

For kitchen Apples, the Rev. Dr. BARTRUM had a splendid collection, Messrs. S. GREEN, ORPEN, and LOWTHER securing the other awards.

At this show there are special prizes for the d'Arcy Spice Apple, as this is its birthplace, and there is always a strong competition. Mr. MAY and Rev. Dr. BARTRUM won 1st and 2nd prizes with beautiful fruits of this none too handsome Apple, though few are superior in flavour, and it will keep till May.

Pears were numerous, and there was excellent quality for the collection. Mr. GREEN was 1st, the Rev. Dr. BARTRUM being a close 2nd.

VEGETABLES were of fine quality. For the large collection, Messrs. GREEN, LOWTHER, and Gen. LARPENT were the leading exhibitors.

Table decorations and berried and foliaged plants were well staged.

MAIDENHEAD CHRYSANTHEMUM.

NOVEMBER 15, 16.—While the weather was very discouraging during the two days the above Society's exhibition was open, the show itself was the best yet held, and the number of entries exceeded that of previous years by upwards of a hundred. The Town Hall and two adjoining rooms in which the exhibition was held scarcely afforded sufficient room, and for this reason the effect was not so good as it would otherwise have been.

Cut blooms.—The leading class was that for thirty-six Japanese blooms in not fewer than twenty-four varieties, and not more than two of one variety. Mr. PERKINS, gr. to the Hon. F. D. SMITH, Greenlands, Henley-on-Thames, won the leading position, closely followed by Mr. Fulford, gr. to F. D. LAMBERT, Esq., Moor Hall, Cookham. Mr. PERKINS' best blooms comprised G. J. Warren, Mary Molynex, Madame Carnot, Australie, Australian Gold, Lady Hanham, Hon. F. D. Smith, and Nellie Pockett. Mrs. J. Lewis, Ella Curtis, and Madame Carnot, were very fine in Mr. FULFORD'S stand.

In a class for eight vases of specimen blooms, Japanese, each containing three blooms of one variety, Mr. FULFORD was 1st with some of the best blooms in the show; the varieties Mrs. H. Weeks, J. R. Upton, Nellie Pockett, Australie, and Madame G. Debrie, being extra fine; Mr. PERKINS was a good 2nd.

Another class for eighteen Japanese blooms arranged on a space 5 feet by 3 feet, height not to exceed 2 feet 6 inches at back, with the addition of any foliage plants or foliage, brought several competitors, although there was nothing very novel in the manner of setting-up, the blooms being arranged at equal distances over the space, and interspersed with Adiantums and other foliage. Mr. Minty, gr. to C. SEXTON, Esq., Riverdene, Cookham, was 1st; 2nd, Mr.

Young, gr. to J. P. FIELD, Esq., Bray Court, Maidenhead. Mr. MINTY was also 1st for twelve Japanese blooms; 2nd, Mr. PERKINS.

Two classes were provided for six Japanese, one variety; in one Mr. LANE was 1st with fine blooms of Nellie Pockett. In the other Mr. PERKINS was 1st with large blooms of Australie; the competition in both classes being keen.

Some very good incurved blooms were staged, although the competition in these classes was limited to two or three exhibitors. With twenty-four blooms Mr. LANE was 1st; and for twelve blooms Mr. C. YOUNG was 1st. The last-named exhibitor won two 1sts in two classes of six, one variety, with Duchess of Fife and C. H. Curtis respectively, the last-mentioned being the best blooms in the show. Mr. YOUNG set up a good stand of twelve Anemone blooms, and was awarded 1st prize.

Groups of Plants were a strong feature, five exhibitors competing. The plants were arranged in a semi-circle, foliage plants allowed at the discretion of the exhibitor. Mr. PERKINS won 1st place with rather tall plants, backed with a Cocos Weddelliana and small Crotons, Dracena Lindeni, and Palms, interspersed and arranged round front; Mr. FULFORD was a close 2nd.

A group of miscellaneous plants brought five competitors, Mr. FULFORD coming 1st with a lightly-arranged group; 2nd, Mr. Richardson, gr. to G. HERRING, Esq., Bridge House.

Several classes were devoted to vases and table decorations. Mr. YOUNG was 1st with a basket of twelve blooms with any natural foliage. A class for six plants of Begonia Gloire de Lorraine was won by Mr. FULFORD with grand pyramidal plants.

Fruit and Vegetables were extensively shown; Mr. GIBSON was 1st for Black Grapes, a collection of vegetables, and several single dishes. Mr. GOODMAN, Bourne End, also won 1st for another collection of vegetables. Mr. Hutt, gr. to Capt. FARWELL, Burnham, was 1st for three dishes of Apples; and Mr. PAXTON, Taplow, for a similar quantity of Pears.

Miscellaneous.—A number of miscellaneous exhibits were contributed: Mr. R. OWEN staged a quantity of cut flowers and many plants; Mr. ERIC STECH, vases, hand-bouquets, and other floral devices; Mrs. BROUGHTON, wreaths and other devices in Chrysanthemums; Mr. HOUSE, Westbury-on-Trym, Bristol, a quantity of Violets in several varieties.

SCOTTISH HORTICULTURAL ASSOCIATION.

NOVEMBER 15, 16, 17.—Despite most unfavourable weather, the twenty-fourth show of the Scottish Horticultural Association was opened on Thursday at Waverley Market, Edinburgh, and was a pronounced success, as stated in these pages last week.

Cut Blooms were numerous and of good quality, and handsome prizes were offered in the thirty-seven classes provided in the schedule. For twenty Japanese varieties, three blooms of each, staged in vases, the City of Edinburgh prize—a piece of plate, value £20—was offered in addition to the prize of £15 as 1st prize, as was stated in our last issue. Mr. Lunt, gr. to Captain STIRLING, Keir, Dunblane, was the easy winner of the 1st prize with handsome examples, very well put up. The following were the most noteworthy examples:—Edith Tabor, Madame M. Ricou, Mrs. J. Bryant, Mrs. Weeks, Mrs. J. Lewis, Mrs. Barkley, M. Chenon de Leché, and R. Hooper Pearson; Mr. J. BEISANT, Castle Huntley, was a good 2nd with full-sized blooms of Mrs. Barkley, J. R. Upton, Miss A. Byron, Scottish Chief, Emily Towers, and Mrs. Cadbury; Mr. D. NICOLL, gr., Rossie Priory, Forgan-denny, was 3rd.

For twelve varieties, three of each, in vases, there was a severe contest; but in the result, Mr. NICOLL secured the leading award with finely-developed specimens of Mutual Friend, H. Weeks, Pride of Madford, Simplicity, M. von Andre, Emily Towers, and Lady Ridgway; Mr. LUNT, 2nd, followed very closely.

For four vases to contain six blooms of Japanese varieties in each, Mr. D. KIDD, gr., Carberry Towers, Musselburgh, was 1st with truly representative blossoms of leading varieties; and Mr. LUNT was a close 2nd.

There were sixteen competitors in the two-vase class of six Japanese blooms in each vase, and Mr. R. COSSAR, gr., Eskgrove, Inverness, was 1st with excellent blooms.

In the one vase, six blooms class, any one variety, Mr. W. MOIR, gr., Rosehaugh, Avoce, was 1st with handsome examples of Mrs. J. Lewis; Mr. COSSAR, was 2nd, with flowers of Edith Tabor; and Mr. ARMSTRONG, 3rd with Viviani Morel.

A feature of this show were the classes set apart for specified varieties, six blooms of each placed in a vase. Mr. A. McMILLAN, gr., Douglas Castle, had the best with Charles Davis, really excellent examples having regard to size, form, and colour.

The variety Mrs. Ritson was best shown by Mr. G. SHOTTON, gr., Swarland Hall, Felton, Northumberland. Mutual Friend was well represented by line competitors, Mr. BIRD securing the 1st prize. Mr. SHOTTON was 1st for Lady Hanham; Mr. LUNT 1st for fine and handsome blooms of M. Ch non de Leché; M. Gustave Henry was grandly shown by Mr. REDFERN, Kingsmunnah, Peebles, 1st; Mr. BIRD won easily for a vase of Miss Nellie Pockett.

Decorative varieties were well represented in bunches of non-disbudded flowering shoots in vases of three varieties, in conjunction with any kind of foliage. Mr. A. E. TORD, Stoneybank, Musselburgh, was 1st for handsome examples of Elaine, Source d'Or, and yellow La Triomphante; and Mr. J. H. COOK was 2nd.

Cut blooms staged in the ordinary manner were numerous and good, but it cannot be said that they were so interesting as those shown in vases. For thirty-six distinct varieties Mr. LUNT was 1st with full, handsome examples of leading varieties; and Mr. H. KENYON, gr., Monkham, Essex, was 2nd.

For twelve Japanese shown in four varieties, three blooms of each, 1st, Mr. MOIR, with E. Tabor. Mrs. J. Lewis, Soleil d'Octobre, and Lady Ridgway; 2nd, Mr. J. CUMMING. Mr. LUNT was 1st for six blooms, any one variety, he having fine, full examples of Lady Ridgway; Mr. LUNDY following with H. Weeks.

Incurved varieties are never well represented here, the climatic conditions being unfavourable for the successful culture of this section. For twenty-four and for twelve distinct, Mr. SHOTTON, gr., Swarland, was an easy 1st with neat-looking, but small-sized blooms. Mr. BOUCHER was 1st for six blooms of any one variety with examples of J. Agate.

Mr. WELLS, Earlswood Nurseries, won the Society's Silver and Bronze Medals for the best Chrysanthemums not in commerce, staging W. R. Church, a flower with red tipped yellow florets; and Mabel Morgan, a rich yellow flower with narrow florets, of quite good form.

Plants are but poorly represented here. Mr. W. PULMAN, Holywood; and Mr. D. CAVANAGH, St. Edward's, Murraysfield, were the leading prize-winners.

Mr. H. J. JONES staged, not for competition, a fully representative collection of new Chrysanthemums.

The arrangements in general, under the experienced direction of Mr. R. B. LAIRD, were everything that could be wished.

BOLTON CHRYSANTHEMUM.

NOVEMBER 16, 17.—The Bolton and District Chrysanthemum Society held its annual show in the Albert Hall in this town on the above dates. The Society commenced operations very unpretentiously many years ago, but has gradually developed until it has become one of the most flourishing societies in the northern counties. Last year's show was the largest the Society had held up to this period, and this year the entries (310) showed an increase of ten, representing five additional exhibitors. The quality was very high, the open classes, including many well-known growers, whilst for a manufacturing district the amateur display was exceedingly creditable. One of the most striking features of the show was the beautiful array of miscellaneous plants and flowers, arranged with mirrors for artistic effect. The following were the leading prize-winners in the open classes:—

Thirty-six Chrysanthemum cut blooms: 1st and twenty-guinea Cup, the Dowager Lady HINDLIFF, Droitwich; 2nd, J. STANING, J.P., Leyland; 3rd, R. G. ALLEN, Liverpool. Twenty-four Chrysanthemum cut blooms: 1st and ten-guinea Challenge Cup, R. G. ALLEN; 2nd, J. STANING; 3rd, Lady HINDLIFF. Twelve vases of Chrysanthemums: 1st, Lady HINDLIFF; 2nd, J. STANING; 3rd, R. G. ALLEN. Basket of cut Chrysanthemums: 1st, J. MCLEAY, Bolton; 2nd, E. KNOWLES, Bolton; 3rd, W. SNAPE, Bolton. Group of Chrysanthemums: 1st and Cup, W. H. LEVER, Thornton Grange, Cheshire; 2nd, J. W. MAKANT, J.P., Bolton; 3rd, Mr. J. MUSGRAVE, Bolton. Group of miscellaneous plants: 1st and Cup, E. T. CROOK, Bolton; 2nd, J. W. MAKANT; 3rd, Mrs. SHAW, Bolton. Six flowering Chrysanthemum plants: 1st, J. MUSGRAVE; 2nd, J. W. MAKANT.

A number of small classes were competed for, but which we are unable to notice.

BRADFORD CHRYSANTHEMUM.

NOVEMBER 16, 17.—The fourteenth exhibition of the Bradford Chrysanthemum Society proved to be very successful. The competition was very close in all classes, and the quality of flowers could hardly be surpassed anywhere.

Mr. Midgley, gr. to Mrs. MASON BANKFIELD, carried off premier honours, having won the Challenge Cup three times, it now passes into his hands. He had an excellent collection of perfectly finished flowers; his best were Mrs. G. J. Warren, Janet Lady Clark, Hero of Omdurman, M. Chenon de Leché (excellent), Lady Hanham, Reginald Godfrey, Nellie Pockett, and Phebus. Mr. W. DAWES, gr. to Lord TREVOR, was a good 2nd.

For twenty-four blooms incurved in not fewer than eighteen varieties, Mr. DAWES was 1st, and Mr. J. H. GOODACRE, Elvaston Castle Gardens, Derby, 2nd.

Class 3 for twelve Japanese blooms brought much competition, Mr. J. Collier, gr. to G. SINGER, Esq., Coventry, leading with a stand of very fine and large flowers. His flower of Graphic was by far the largest in the show.

The "Vase" classes proved very interesting, and made a conspicuous display. Mrs. R. FAIRBAIRN had the best bloom, with Mr. MICHIE as a good 2nd.

The local classes were strongly contested. Lord MASHAM'S Challenge Cup went to Mr. J. THORNTON, Lumball Nursery, the Cup presented by the Members of the City of Bradford to Mr. MIDGLEY.

Groups composed of Chrysanthemums only were arranged with good taste, and showed considerable improvement upon those shown in former years. The Mayor of the city presented a Cup in this class, and it was won by Mr. L. SHEARMAN, Undercliffe Cemetery.

The exhibitors in the class for a group of miscellaneous plants, have more scope in which to make an artistic arrangement. Mr. J. H. MOORE, gr. to Sir F. RUTLEY, had a

pretty group evenly balanced with flowering and foliage plants. Mr. T. Bell gr. to H. RAND, Esq., was 2nd.

Table plants Primulas, and Roman Hyacinths were good and represented a large number of exhibitors. Floral arrangements and bouquets were admirable, the Messrs. BROOKES leading in most classes.

One of the certificates of the National Chrysanthemum Society was awarded to Mr. W. DOWES for a superb flower of G. J. WARREN, and the other to Mr. T. BIRD, Windhill, Shipley, for a bloom of Mme. Ferlat.

Certificates of Merit were awarded to Mr. J. FORBES, Hawick, for a basket of Begonia Coddonia; Messrs. WELLS & Co., for new Chrysanthemums; Mr. R. EICHEL, Eldwick, Bingley, for an excellent group of Orchids, and ornamental foliage plants; Mr. T. HOBMAN, for a choice selection of plants; Mr. H. DICKINSON, for Grapes; and to Mr. F. W. E. SHROVELL, Tonbridge, Kent, for an interesting exhibit of vegetables grown on his experimental farm.

Mr. W. H. RUSMAN, the Chairman of the Executive Committee during the past six years, may be congratulated upon the success which attended the show.

ROYAL HORTICULTURAL OF ABERDEEN.

NOVEMBER 17.—The annual meeting of the members of this Society took place in the Music Hall Buildings, Aberdeen, on the above date. There was a good attendance, and Mr. W. PYPER, of Hillhead, Chairman of Directors, occupied the chair. The annual report of the directors and the accounts were submitted. The report stated that with regard to the annual exhibition of the Society, which was held on August 16, 17, 18, the directors regretted to have to report that while the expenditure amounted to £457 3s. 11d., the income amounted to £431 10s. 8d., leaving a deficit of £22 13s. 3d. This was due to the fact that the entries, and consequently the subscriptions, were much fewer this year, there being a falling off of some £30 under this heading. The directors had pleasure, however, in drawing the attention of members to the fact that, besides £250 of b-quests left to the Society in the course of last year, which had been invested in the purchase of feu-duties, the Society has £169 6s. 3d. at its credit to carry forward to next season.

CHESTER PAXTON.

At the Chester Town Hall, on Tuesday, Lady Lettice Grosvenor opened an exhibition of fruit and Chrysanthemums in connection with the Paxton Society, which has done valuable work in fostering the culture of fruit, and that much-prized flower the Chrysanthemum.

Commencing with the Chrysanthemums, the groups were very effective, arranged as they were in semi-circles. In this section there were six competitors, as against five last year; and for the third time in succession, Mr. EDWIN STUBBS, gr. to Mrs. HUDSON, Biche Hall, has carried off the 1st prize; but never has he been so hardily pressed as on the present occasion. A fresh exhibitor this year, Mr. T. GIBBONS FROST, of Mollington Banastre (gr., Mr. Gilbert), following him very closely, and gaining the 2nd prize. A veteran exhibitor, Mr. Jno. Taylor gr. to Mrs. PORTS, of Hoole Hall, won the 3rd prize, with a very creditable collection. The other classes, both in plants and cut blooms, were all well competed for.

Fruit is always a special feature at this exhibition, and on the present occasion the quality was of a very high order. In the gardeners' class for home grown Apples, twenty-four distinct varieties, the premier honours were secured by a local grower in the person of Mr. EDWARD PAUL, BAYROW (gr., Mr. H. Fletcher). A near neighbour of Mr. Paul's, Mr. LYLE SMYTH (gr., Mr. Morris), was awarded 2nd prize; while Lord COMBERMERRE had this year to be content with 3rd place.

For smaller growers, the classes this year were made for twelve and six varieties. For the best twelve, Mr. J. SAUNDERS, gr., Bonnant Hall, who has long been famous as an excellent fruit-grower, easily secured 1st prize. Mrs. TOWNSEND-INGES's collection was given 2nd prize, but her excellent fruit was lacking the colour of the Bodnant exhibit. The Hon. Mrs. KENYON took the 3rd prize with fruit of good quality, but under-size; compared with the two other prize-winners. For six varieties, a local fruit-grower in Mr. SIMON NOWELL, Whitby Heath took 1st prize; Capt. FEILDEN being 2nd; and Mr. R. R. SALMON, of Rowton, being awarded 3rd prize. The entries for Pears were the very best that has ever been made at this show, and the average quality was of a very high standard. For the best collection of six distinct dishes, a noted grower in the Rev. L. GARNETT, Christleton Rectory, easily secured 1st prize; Lord COMBERMERRE being 2nd, and Mr. HUGH LYLE SMYTH 3rd.

His Grace the Duke of WESTMINSTER sent, not for competition, an exquisite collection of Apples, Pears, Grapes, and other fruits, together with a collection of cut blooms, all of which were arranged on a large table near the centre of the room. This exhibit was one of the most effective in the show, and attracted much attention. It reflected great credit upon Mr. N. F. BROWN, His Grace's respected head gardener. For the Duke of WESTMINSTER's stand, the judges made an honorary award of a Gold Medal. Messrs. DICKSONS stand comp. use of choice flowers and foliage plants, hardy fruits, &c. Messrs. McFARLIE & Co. also staged a creditable exhibit as did also Mr. F. W. DUTTON, of Queen's Park Nurseries. Another non-competitive exhibit, which deserves special mention, was that sent by Mrs. HUDSON, of Biche Hall,

arranged by her gardener, Mr. E. STUBBS, and largely comprised of choice, sweet-scented Violets. In the previous shows, Grapes have not always been very prominent, but this year the entries were exceptionally good the 1st prize being awarded to Mr. J. SAUNDERS, Bodnant; the 2nd to Mr. F. W. SOAMES, Wrenham (gr., Mr. Shaw); while the 3rd was secured by Mr. G. W. HAYES, Hode Bank (gr., Mr. Edge).

NATIONAL CHRYSANTHEMUM.

NOVEMBER 19.—A meeting of the Floral Committee of this Society was held on Monday last in the Royal Aquarium, Westminster. There were numerous novelties exhibited, but few of them were given awards, the Committee desiring to see several promising varieties on a future occasion. Those which gained awards were as follows:—

Chrysanthemum Frank Hammond is a first-class novelty, of the true incurved section. The flowers are large, of good build, and the florets of considerable length and almost square at the tips. The colour of the flowers is a mixture of pale red and buff, being a clearer yellow towards the centre. The three flowers shown by Mr. N. MOLYNEUX, gr. to J. C. GARNIER, Esq., Rooksbury Park, Fareham, were scarcely fully developed (First-class Certificate).

C. Mrs. Bagnall Wylde is a yellow variety of the Japanese type, of moderate size, but possessing much refinement. The florets are rolled to some extent, and the yellow colour is richer and more vivid in the centre of the flower. From Mr. WEEKES, gr. to Lady BYRON, Thrumpton Hall, Derby (Award of Merit).

C. Golden Gloaming.—A very distinct Japanese incurved flower, with exceedingly broad florets. The upper surface of the florets is palest red colour, and the reverse pale buff. The florets are about three-quarters of an inch wide, and scooped like a spoon at the tips. The variety is more than usually distinct, and will be prized by many, but the colour is one that will not meet with appreciation from all. From Mr. DANIELS, gr. to Col. NORRIS, Swanchiffe Park, Banbury (First-class Certificate).

C. Miss Roberts.—A rich yellow Japanese flower, of great width, but rather thin as shown, and of no great depth. The florets are rolled and twisted. From Messrs. W. & R. OWEN, Maidenhead (Award of Merit).

Among other novelties exhibited were the following, several of which the Committee requested might be shown on a future occasion:—*Miss M. J. Webber* (Molyneux), a large Japanese, colour reddish-purple, with silver tips to the florets, and silver reverse; *Nellie Perkins* (from Mr. PERKINS, Greenlands Gardens, Henley-on-Thames), an immense Japanese flower of pale lilac colour, with yellowish tint in centre, not specially attractive; *Viscount Sudeley* (Perkins), a white incurved Japanese; *Arthur King* (Owen), a white incurved, rather short in floret; *Superintendent Longstone* (Weeks), a dull red-coloured Japanese; *Mr. C. Crooks* (Weeks), a yellow-coloured Japanese; and *Mrs. J. Cutts* (Weeks), a very promising incurved Japanese variety, colour yellow.

A few single-flowering varieties were shown by Mr. G. W. FORBES, Regent House Gardens, Surbiton, who shows blooms of this section with great success at the Society's exhibitions, but none of the varieties staged on this occasion was favourably noticed by the Committee.

The Floral Committee will only meet once again this season, and that will be on December 4, the opening day of the winter exhibition.

ANSWERS TO CORRESPONDENTS.

BOOKS: *G. Brook*, *Hardy Ornamental Flowering Trees and Shrubs*, by A. D. Webster, *Gardening World Office*, 5 and 6, Clement's Inn, Strand, W.C., price 3s.

CABBAGES, &c.: *S.* Not "finger-and-toe," but the result of the attack of a weevil. Gas-lime has been tried with success. Burn the affected plants as far as you can. Dip the roots of the plants in a puddle, made with soot and clay, before planting them. For wireworm, dress the land heavily with gas-lime, and leave it fallow for four months. Paring and burning, and leaving fallow for several months destroys the grubs and starves the insects. Potatoes and Carrots can be set as traps.

HERBARIUM: *J. C. T.* If you have access to *Gray's Botanical Text Book* (6th edition, 1879, p. 380), you will find elaborate directions how to form a herbarium. To preserve the colours of variegated leaves, you should place them between several sheets of paper (not blotting-paper), and change the paper frequently so as to dry the specimens as rapidly as possible. When dry, mount them on paper of a predetermined size; take care to mount only one species on each sheet, but as many specimens of the same species as you like. Write the name of the plant at the lower right-hand corner, and do not forget to mention the source whence the specimen was obtained, and the date at which it was gathered. Place the

sheet in a genus-cover, which should be stouter than the paper on which the species are mounted and a little larger.

INSECTS' EGGS ON PEAR: *W. Hoon*. Those of the Lucky Moth, probably, if you found them encircling the shoots like a band.

MOSS ON LAWN: *B. K.* Judging by the fact of the moss continuing to grow after repeated dressings of wood-ashes, it would seem that the land is very wet, and is in need of underground drains (pipes or, better still, rubble). These drains may be about 20 feet apart, and 3 to 4 feet deep. If made of rubble, cover them with heather, of which there is plenty in your locality. Having drained the land, manure and dig it one spit deep, and sow the finest lawn mixture of grasses and small clovers.

NAMES OF FRUITS: *We are most desirous to oblige our correspondents as far as we can consistently with our editorial work, but as the naming entails much labour and considerable cost we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay is often unavoidable.*

J. B. C. 1, Queen Caroline; 2, Hoary Morning; 3, Golden Winter Pearmain; 4, Cellini; 5, Ross Nonpareil; 6, Winter Greening.—*A. J.* Pears: 1, rotten; 2, a fine example of Brown Burre, or Burre du Roi as it is known in some collections; Apples: 1, Scarlet Nonpareil; 2, Greenup's Pippin; 3, Filbasket. The shrub is *Crataegus coccinea*.—*G. P.* Pears: 1, Burre Bosc; 2, rotten and smashed; Apples: all samples very poor. 1, Winter Greening; 2, Scarlet Nonpareil; 3, Queen Caroline; 4, not known, a poor variety. At many autumn shows classes are provided for the exhibits you mention, but it is getting late now. We are glad to hear you are so successful.—*H. W. D.* 1, Golden Spire; 2, Cobham; 3, Augustus Pearmain; 4, Calville Rouge de Mécoud; 5, not known; 6, Winter Greening.—*E. T.*, and *J. C. W. & Son*. We cannot trace your fruits, but will make enquiries.—*G. W. R.* Your specimen is not a sufficiently good one.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*W. T.*, Harrogate. *Odontoglossum* × *Wilckeanum* of that class which approaches nearer to *O. crispum* than to *O. luteo-purpureum*, the other parent. A very pretty variety.—*G.*, Brighton. A good *Odontoglossum* × *Andersonianum*.—*E. E. A.* *Meyenia erecta alba*.—*C. J. A.* A very finely coloured variety of *Catasetum macrocarpum*.—*No Name*, small deal box. *Cologynemimbriata*.—*H. B. Stoke*. An *Oxalis*, not a Clover; no flowers found.—*H.*, Inverness. *Cotoneaster affinis*.—*A. E. W.* 1, *Leucothoe (Andromeda) axillaris*; 2, *Kalmia latifolia*; 3, *Adiantum hispidulum*; 4, *Asplenium marinum*; 5, *Polypodium venosum*; so far as we can judge by the imperfect specimens sent.—*F. C.* We do not recognise the leaf.—*W. B.* We cannot undertake to name *Chrysanthemums*.

SOUTH COUNTRY NURSERY STOCK GOING NORTH: *Gardener*. There are grounds in some instances for the dislike north country gardeners have for hardy trees and shrubs from the south. For example, to transplant Conifers and deciduous trees and shrubs from a sheltered nursery to a bleak hillside, or the outside of a wood facing N. or E. in the north, would be sure to result in stunted growth for some years, and in some bad cases the loss of the trees and shrubs. But we fail to see what harm is likely to occur to hardy subjects, from exposed southern nurseries, when planted in gardens, which, in the majority of cases are sheltered from the colder winds. Frost alone would not harm hardy plants.

COMMUNICATIONS RECEIVED.—*R. P. Glendinning*—*C. W. D.*—*E. V. B.*—*Max Leichtlin*—*W. J. W.*—*Blackie & Son*—*D. T. F.*—*F. T. M.*—*P. M. T.*—*J. S. V.*—*C. G. Runnacles* (a report already to hand).—*F. S. & Co.*—*A. W. Wade*.—*Anxious*.—*H. C.*—*G. W. H. A. C.*—*A. & McL.*—*J. S. S.*—*Seeker*.—*S. K.*—*A. H. S.*—*J. R. W.*—*A. R.*—*Tolleridge*.—*Florence B.*, no Pear sent.—*A. B.*—*J. A.*—*E. Webb & Sons*.—*T. G.*—*H. A. B.*, next week.—*C. F. Y.*—*A. J. L.*—*J. C. W.*—*J. Snell*.—*J. B.*—*R. P. B.*—*F. W. A.*—*E. C.*—*J. J. W.*—*Caldonius*.—*J. D. G.*—*J. R. W.*

PHOTOGRAPHS RECEIVED.—*R. P. G.*

(For Markets and Weather, see p. viii.)

THE

Gardeners' Chronicle

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EFFECT OF INCANDESCENT GAS-LIGHT ON PLANT GROWTH.

AT the West Virginia Station, Mr. L. C. Corbett has been conducting a series of experiments in a greenhouse, which have been carried on during the years 1895 to 1899 with Lettuce, Radishes, Spinach, Tomatos, Sugar-beets, and seedling Cabbage, mainly from an economic standpoint. Eight Welsbach incandescent burners were used in the experiments, and these were so alternated in position from time to time as to overcome local temperature and light differences.

The experiments with Lettuce involved twelve distinct crops and nearly 10,000 plants. Transplanting the young plants from pots and using an artificial light only during the period the plant occupied the permanent greenhouse bench, were adopted after comparative trials as being the best method for the growing of Lettuce on a commercial scale. The plants grown in artificial light were taller, heavier, grew faster, and matured quicker than plants grown from the same lot of seed under normal conditions. In one experiment 400 plants exposed to the stimulating influences of the artificial light for forty-six nights weighed 68½ lb.; while a similar lot grown under normal conditions weighed 49½ lb., an increase in favour of the former of 38½ per cent.

Radishes were grown between the rows of Lettuce, as is commonly practised in commercial houses. The artificial light notably increased the development of the tops of the Radishes, and slightly increased the size of the

roots. The heliotropic effect of the incandescent light was greater with Radishes than with any of the other plants grown. The stimulating influence of the incandescent light, on the other hand, was greatest with Spinach. It caused the production of seed shoots in the row to a distance of nearly 8 feet from the light. Spinach-plants subject to the influence of the light, grew faster and completed their growth in less time than plants grown normally.

The records of the yield, and the date of first bloom of Tomatos grown from seed and also from cuttings, show no increase in weight of the fruit grown in the light, though the blossoming period was from eight to eighteen days earlier, and the individual fruits were generally larger than when grown under normal conditions.

With Sugar-beets, the tops, sugar-content of the roots, and percentage of purity were considerably increased by the use of the incandescent gaslight. The largest and heaviest roots, however, were grown under normal conditions.

The range of stimulating influence of the incandescent light was somewhat variable for different crops. In general, the maximum growth was attained at 12 to 16 feet from the light, while a perceptible increase was noted at 24 feet.

The stimulating influence of the light as indicated by the growth of plants used in the various tests, is shown by the order in which the sorts are named, the first being the most susceptible:—Spinach, Cabbage, Radish, Lettuce, Tomatos.

In a study of the periodicity of plant-growth as modified by the influence of the artificial light, it was found that the most active period of growth of Lettuce subject to the influence of the incandescent gaslight began at 11 P.M., and continued until 9 A.M.; while with the plants grown under normal conditions the most active period of growth began at 4 A.M., and continued until 11 A.M. In the first instance the period of growth was ten hours, and in the second seven hours.

In these experiments no injurious effects resulted from the use of incandescent gaslight. This is important to know, as many conservatories are, at the present time, being fitted up with the incandescent gaslight. *J. J. Willis, Harpenden.*

SOIL CULTIVATION.

THERE is an opinion floating about among the rural population that soil cultivation has retrograded considerably within the last fifty years; and if this is true of farming, it is, I am afraid, not without its counterpart to some extent in gardening also. The reasons for this are perhaps not far to seek, and may be discovered in the loss of working-power through the reduction in the number of men employed in so many gardens, and the increase of labour in other directions that were not even thought of so late as thirty years ago. The natural consequence is a slackening of labour where it is apparently least wanted.

Let us accept the position, and take it for granted that there is not, by any means, the same amount of labour expended on soil cultivation, and that largely because it is beyond the power of the gardener to provide; and let us see if it is impossible under present-day conditions to give due attention to the soil, the husbandman's bank in all ages. It is, perhaps, unnecessary to say that trenching may be largely dispensed with in those gardens where the soil

has been formerly worked to a good depth say, of 30 inches, because there is reason to fear the practice of trenching and re-trenching ground has, to some extent, been neglected. My own opinion, founded on some experience and observation, is that it may have been overdone in the past when trenching was the rule, and simple digging the exception; and I must confess to having had, in more instances than one, crops quite as good off ground that had been thoroughly prepared by digging as off ground lying in close proximity that had been trenched. Let it be clearly understood, however, that it was not a question of trenching against digging, but of re-trenching soil already deeply worked against cultivating the top spit of the same. If it is a fact then that crops equal to, or let us say to be quite safe, all but equal to those secured from ground newly trenched can be produced by digging, the value of re-trenching from a purely utilitarian point of view is liable to be over-rated—and very greatly over-rated; because, speaking broadly, it requires almost three times the amount of labour to trench a bit of ground efficiently as to dig it. Trenching, moreover, has certain drawbacks, that particularly on cold soils detract from any benefit that one may reasonably expect from an operation that involves so much labour. For example, newly-trenched ground is easily saturated with rain, is very difficult to dry, remaining wet and cold long after ground simply dug has become dry and warm. This evil can be escaped in two ways, either by carrying out the trenching early in autumn, or in the spring-time. Personally, I trench ground only in autumn, while the ground is yet dry, and it has time to consolidate somewhat before the winter rains have washed it. For the same reason I like to dig every bit of ground as it becomes cleared of its crop towards the close of the gardening year, because the soil, as well as lying more dry, is in a better condition for being tilled; clods on the surface, which it is always advisable to break up, being easy to smash with the back of the spade at that season, when later they are sometimes difficult to pulverise.

Under any conditions, I should say the practice of digging, or let us say turning-over or mixing the soil, or any other term suitable to the operation, early in autumn is a thoroughly good practice. Frequently the ground is permitted to lie unoccupied and uncultivated until manure can be obtained in the winter, and then dug in; but, taking into account the time spent in hoeing, cleaning up, and leaving the ground in presentable condition, it might be dug in the same time, and if badly infested with weeds in even less time. Manure, when required, is just as easily carted or wheeled during frost to dug ground, as it is to that which is still to be dug. It of course involves once more turning over the soil, but of all garden work, none I think, pays better than what is called "working the soil." But though the manure may be put on during winter in frosty weather, it would be injudicious to incorporate it with the staple before the ground was in fit condition to benefit from the operation; and as a matter of fact, there is no reason to hurry it. Because manure lying in loose soil has a peculiar tendency to waste very rapidly, where it goes I cannot say, but the fact remains, and largely on that account I like to make soils firm after the second digging, or just before crops are committed to their keeping. This, of course, refers mainly to light soils. *R. P. Brotherston.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

CRYPTOSTEMMA LUSITANICUM.

THIS new annual came to me by seed from Messrs. Dammann, of Naples, and has the merit of being extremely free blooming, with the drawback that its flowers close as soon as the sun ceases to shine upon them, or usually between 1 and 2 P.M., and on dull sunless days they sometimes do not open at all. It is stated by its senders-out to rival the *Gazania*, but excepting in being much more free blooming, I do not think it can compare in beauty with any of the numerous and beautiful *Gazanias* with which I am acquainted. The flowers are of a pale shade of yellow, with dark brown centres, and rise about 8 inches from the ground, each of them on a separate stem. They are well and accurately represented in the accompanying wood-cut (fig. 120, p. 391). *W. E. Gumbleton*. [We cannot trace the history of this plant. The genus is S. African. ED.]

PASSIFLORA "BASING PARK HYBRID."*

From Mr. Smythe, The Gardens, Basing Park, Alton, we have received flowers and leaves of a hybrid Passion-flower, the result of a cross out of *Passiflora racemosa* (princeps of gardens) by the pollen of *Tacsonia mollissima*.

The plant is remarkable as being the issue of a cross between a *Tacsonia* and a *Passion-flower*. In structure it is a true *Passion-flower*, though it shows the admixture of characters in many ways. Thus, on the one hand, the texture and hairlessness of the leaves are more like *Passiflora racemosa* than *Tacsonia*. On the other hand, the form of the leaf and its lobing are more like those of the *Tacsonia*, with the exception that the leaves are five-lobed. The floral structure and the arrangement of the coronal threads are those of a *Passion-flower*, whilst the colour is different from and duller than in either parent. The bracts are much larger than they are in *Passiflora racemosa*, but free and very different from the corresponding parts in *Tacsonia*. The inner membranous corona, which is so characteristic a feature of *P. racemosa*, is much shorter in the hybrid; whilst the hatchet-shaped lobes, which form the border of the membranous corona in the hybrid, are not found in either parent. It is a very pretty and interesting product of Mr. Smythe's skill. *M. T. M.*

HABENARIA COLUMBÆ, n. sp.†

Among the numerous species of *Habenaria* scattered over the world, very few have been considered worthy of a place in our stoves; but it is

* *Passiflora*, "Basing Park hybrid."—Leaves subcoriaceous glabrous, deeply palmately five-lobed; lobes oblong, lanceolate, the two lowermost much the shortest. Peduncle, one-flowered; bracts, three distinct, large, leafy, whorled, ovate-oblong, acute. Flowers nearly 5 inches across, with a short tube ($\frac{1}{2}$ -in.), slightly ten-ribbed, umbilicate at the base, contracted in the middle. Sepals about 2 inches long, dull pink, brighter on the inner surface, oblong hooded, deeply keeled, keel prolonged into a curved awn. Petals pink, $1\frac{1}{2}$ in. long, oblong acute; outer corona of four rows of erect or spreading threads white with purple spots, two outer rows half the length of the petals, two innermost rows of capitate threads half the length of the outer row. Median corona tubular, membranous, erect, dividing above into numerous hatchet shaped, pinkish, erect lobes. Infra-median corona short, annular, fleshy, inflexed; basilar corona cup-shaped, white surrounding the base of the shaft or gynophore. Gynophore greenish, thinly be-tween with red spots, filaments green. Ovary slender, oblong, glaucous, contracted at the top. Styles deep purple.

† *Habenaria columbæ*, n. sp.—Folia 3-4 oblongo-lanceolata carnosula viridia rosulata, 4 poll. longa, 2 poll. lata; scapus 9 poll. altus glaucescens, vaginæ acuminatis tectus; flores distantes 11-12, mediores albi; bracteæ angustæ lanceolatae acuminatæ glaucescentes $\frac{3}{4}$ poll. longæ; pedicelli cum ovaris patentibus virides poll. longi; sepalum posticum cum petalis galeam formans poll. longum; sepalum ovatum acutum acuminè recurvo; petala parva integra falcato-lanceolata acuta; sepalia lateralia multo majora falcata ovata $\frac{1}{2}$ poll. longa, $\frac{3}{4}$ poll. late patentia; labellum trifidum lobis lateralibus angustis linearibus recurvis $\frac{1}{2}$ pollicis longis lobo medio spatulato porrecto $\frac{3}{4}$ pollicis longo; calcarè gracili, cylindrico. $1\frac{1}{2}$ poll. longo, viridi; columna alba; anthera medioer, canalibus longioribus recurvis; pollinia roseo violaceis, pedicellis tenuissimis disco minuto; rostellum antheræ multo brevius apice rotundatum; glandulæ stigmaticæ mediores postulatæ, processibus stigmaticis longis cylindricis porrectis. Siam, in Horto. Bot. Singaporensi, menæ Octobris floruit.

curious that most of these that are cultivated are natives of the Indo-Chinese region, such as *H. carnea*, *H. militaris*, and *H. Susannæ*. To these I would add a very pretty species from Siam, recently imported by Mr. Pereira, which has flowered in the Botanic Gardens, Singapore, and for which I propose the name of *Habenaria columbæ*, on account of the resemblance of the flowers to white doves with wings outspread.

The leaves, three or four in a rosette, oblong-lanceolate and dark green, lie flat on the ground; the scape is 9 inches or more in height, glaucescent, and bears eleven or twelve pure-white flowers on pedicels an inch in length; the upper sepal ovate, acute, with an upturned point, forms, with the small falcate-lanceolate petals, a galea. The lateral sepals are very much larger, falcate ovate, $\frac{3}{4}$ -inch long, and widely spreading. The lip is trifid, the lateral lobes upcurved, narrow, linear; the median one spatulate, as long as the sepals. The spur is $1\frac{1}{2}$ inch long, slender and cylindric, the tip blunt and notched; it is horizontally placed, and white tipped with green. The processes of the anther-cells are long, and curved upwards; rostellum short and rounded; the stigmatic processes acute, cylindric, projecting over the base of the lip. It flowers readily in October, and lasts for some time in perfection, forming a very pretty pot plant. Tubers are being sent to England, where it will, I think, be welcomed as an acquisition to our terrestrial stove Orchids. *H. N. Ridley*.

ORCHID NOTES AND GLEANINGS.

"LINDENIA."

The following plants are figured in the last issued number of this periodical:—

CATTLEYA GASKELLIANA, Reichenbach Fil., var. AMABILIS, L. Linden, tab. DCCXX.—Flowers almost white, with a slight flush of rose; anterior lobe of lip spreading undulate, with a yellow blotch at the throat, and some violet rays in front.

CATTLEYA GASKELLIANA var. REINE DES BELGES, tab. DCXXI.—Perianth segments white, petals fringed at the edges; lip white, with a yellow throat, and a purplish anterior blotch.

CYMBIDIUM PARISHI, Reichenbach Fil., tab. DCCXVII.—Flowers about $3\frac{1}{2}$ inches by 3 inches; perianth-segments ivory-white; lip white, with purplish-brown spots on a yellow ground, three-lobed, lateral lobes erect, anterior lobe spreading.

CYPRIPEDIUM X BORCHGRAVEANUM, L. Linden, tab. DCCXV.—A cross between *C. Lesanum superbum* and *C. villosum*. Standard erect, white, purplish in the centre, with purple veins; petals oblong, obovate, yellowish, flushed with purplish-brown; lip shining purplish-brown.

LELIA GRANDIS, Lindley, var. PELARGONIIFLORA, L. Linden, tab. DCCXIX.—Perianth segments pinkish-brown; lip white, heavily flushed and rayed with purple.

LELIA GRANDIS, Lindley, var. TENEBROSA, Hort., sub-var. LINDENI, Hort., tab. DCCXIII.—Flowers very large, sepals and petals yellowish-brown, flushed with rose; lip purplish-crimson, frilled at the white edges.

MILTONIA CUNEATA, Lindley, tab. DCCXIV.—Sepals and petals chocolate-brown, tipped with yellow; lip white, contracted at the base, expanding into a broad anterior lobe.

SOBRALIA XANTHOLEICA, Hort., var. ALBA, tab. DCXVIII.—Flowers, excepting the throat, pure white; lip much undulate. From the collection of the Marquis de Wavrin.

CATTLEYA LABIATA.

A flower of a very large and richly-coloured variety, of the autumn-flowering *C. labiata*, is sent by R. W. Rickards, Esq., The Priory, Usk, Monmouthshire. It has all the good qualities of the summer-flowering variety "Warneri," the broad front of the labellum being of that rich ruby-crimson often seen in that variety. With it are two abnormal forms of the same species, the one with two labellums, and the other with the labellum on each flower slightly twisted, and the sepals and petals marbled with rose-purple on a light rose-coloured ground, in a manner which will render it an attractive variation if it prove constant.

ONCIDIUM FORBESII.

This fine Orchid, once so scarce in gardens, seems to be plentiful now, and the method of growing it much cooler than formerly has resulted in the

flowers sent to us from various sources appearing much finer than usual. In size and in colour there is much variation, some of the forms approaching *O. Gardneri*, and others *O. Marshallianum*; but in view of the known variation in the species they are too near to the type to warrant the giving of distinguishing names. The ground colour varies from light brown to dark chestnut-brown, the sepals and petals having different degrees of that yellow marking which obtained for the species the name of "gold-laced *Oncid*."

One of the finest varieties we have seen is kindly sent by John Barry, Esq., Quedgeley House, Henleaze Road, Durdham Down, Bristol. The flower measures 3 inches across, the petals and lip being 2 inches wide, and the upper sepal much broader than usual. The colour is bright light brown; the sepals having a slight, and the petals and lip a heavier, irregular margin of yellow. The crest and column wings are reddish-brown. The species was first imported from the Organ Mountains, Brazil, in 1837, and since that time it has repeatedly been brought over; but the error of putting the plants in houses that are too warm, caused them to die in a short time. It will grow well in any cool fruit-houses or conservatories.

HERBACEOUS PLANTS.

(Concluded from p. 375.)

THE adaptations which alpine plants have undergone in conformity with their new mode of life (for "new" in a comparative sense it may be called) are extremely interesting. The effect of the lower temperature in their adopted habitats has been to make them flower later in the season than would be the case were they still living in the plains. This is partly balanced, however, by the fact that the plants during the hibernating season are amply protected from the frost by a thick layer of snow, which, on melting, affords them a large amount of moisture at the roots, so that on the first appearance of the sun after the snow has gone, the growth of the plant is rapid. In high altitudes and latitudes, the flowering supervenes at a very early date after the melting of the snow, which does not occur until later on into the season, so that the plants have but a few months in which to form both flowers and fruit before the wintry conditions once more appear.

It is well known that the colours of alpine flowers are, as a rule, very much more brilliant than those of the plains; we have only to think of such cases as the blue *Gentians*, the alpine *Forget-Me-Not*, *Saxifraga oppositifolia*, to be reminded of this fact. Insects are, of course, much scarcer where such plants grow than they are at lower elevations; and it seems that the two facts may be correlated, and that we may not be very far wrong in assuming that the more brilliant colours are an adaptation to ensure fertilisation by offering a greater attraction to the few bees or flies, &c., which may be about. Natural selection would eliminate all the less brightly-coloured flowers in favour of those more richly endowed.

The high elevation of the habitat of alpine plants would afford a subsoil but poor in nourishment, as compared with that of lower regions; this is, of course, an unfavourable circumstance for the growth and vigour of any plant, and consequently its effect has been to dwarf and stunt alpine vegetation. But another factor also exists to induce a similar result, and that is the exposure to strong winds; no plant, even supposing an adequate supply of nourishment were forthcoming, with branches or leaves of any length or exuberance, would run the risk of having them battered and broken. So that the effect of the exposed situation upon alpine plants has been, in very many instances, to induce not only a dwarfed, but a dense tufted or caespitose habit of growth, which is a necessary result of the fact that the plant, while being obliged to branch in order to produce offspring and as many fresh flowers as possible, has been obliged to do so in a very compact and matted way

the base being greatly reduced in size and crowded on the branches, thus ensuring themselves against the loss of too much water; the roughest winds can thus sweep over such plants without either shaking or battering them. Examples of such are the Saxifrages, Gentians, and the Moss Campion.

seems to point to the fact that they have been driven there through stress of circumstances, and having been forced to stay, have through long ages adapted themselves in the ways above set forth to their new and altered conditions of life. That the latter is the true view is shown by the

cultivation many of the conditions of their ordinary habitat to be supplied to them is due to the fact that their powers of adaptation to new surroundings are not easily aroused, their organisation is not so plastic, is not so easily induced to vary with the environment as is the case with others. Hence, to grow the majority of alpinas successfully, a rock-garden must be constructed, the rocks being disposed so as to imitate as closely as possible the conditions which Nature affords on the mountains. Let the ledges, hollows, angles, the dip of the rock-strata, the drainage, and the quality of the substratum, be as far as possible duplicates of those in the fastnesses where grow our alpine gems. Some, like many Saxifrages, prefer very moist and shady hollows, others like the Gentians, Edelweiss, and Campanulas, enjoy the hot exposed surface of a grassy slope or rock, upon which to spread forth their blooms; some grow erect, others hang pendent down some perpendicular face of rock. Most of our alpinas can easily dispense with the high elevation, the exposure to rough winds, and a lower temperature—in fact, are no doubt delighted to be free from such conditions; but they still require their rocks and ledges, and would not be happy deprived of them. The habit, observed at Kew, of covering the soil in which the plants are rooted with coarse gravel of limestone, is probably to protect the soil from becoming overheated by the sun's rays.

Herbaceous perennials are amongst the easiest and most interesting of plants to cultivate, and amongst them I think the alpine forms are by far the most beautiful and fascinating. This interest and fascination will certainly be very much intensified and increased if, besides the mere practical methods of rearing them in the garden, we know something of the laws which govern their delightful life history. W. C. W.

THE DISSOCIATION OF HYBRID CHARACTERS.*

A PAPER by M. Hugo de Vries appeared in the July number of *Revue Générale de Botanique*, on this subject, about which those who are interested in the phenomena of hybridisation among plants, may like to know something.

By "units" (*unités*) the author means the specific or varietal characters united by crossing; and taking a simple case where only one character separates the two, or paying attention to one only, when there are more than one difference, he deduces a law governing the proportions of the descendants which continue the hybrid, and of those which reproduce the parental types. It can be neatly expressed by a familiar mathematical formula.

The author first refers to the common idea, that if the two units differ only in colour, the result would be a combination. Thus the purple rim of the corona of *Narcissus poeticus*, combining with the yellow of the Daffodil, has resulted in an orange-tinted cup in some members of the section "*incomparabilis*." But, as he observes, a great number of cases do not conform to this rule.

He leaves on one side the characters which are common to both parents, and only considers that in which they differ. The investigation is simplified by the fact that, as a rule, only those species cross in which the differences are not very pronounced.

Alluding to practical hybridisers among horticulturists, the author observes that it is often the object to introduce some one special character into the existing cultivated plants;

* The title in full is *Sur les Unités des caractères spécifiques et leur application à l'étude des hybrides*; but as this would not convey the main point, we have given a shorter one to this abstract.



FIG. 120.—CRYPTOSTEMMA LUSITANICUM. (SEE P. 390.)

Many people have supposed that alpine plants have always been alpine plants, and no doubt this is largely true as regards the existing species; but it is a mistake to suppose that there have always been such plants, that an alpine habitat is due to the aboriginal tastes and preferences of the ancestors of those plants. On the contrary, every evidence

fact that many alpine plants possessing the above named special adaptations, gradually lose these and assume the characters of lowland forms, if grown for several years under conditions suited to the latter; they become under such conditions more vigorous and luxuriant in every way. That many alpine plants still require when under

so as, e.g., to enable half-hardy plants to acquire the hardiness of the one with which they are crossed; or to impart larger petals or greater depth of colour, &c. Such cases are readily brought under the law.

He calls those hybrids, of which the parents only differ by a single character "monohybrids." Thus, *Datura tatula* only differs from *D. Stramonium* in having purple flowers.

Di-, tri-, tetra-hybrids, &c., are those of which the parents differ by two, three, four, or more characters or units.

Polyhybrids are those whose parents are distinguished by an indefinite or at least a large number of characters.

Hybrids can also be di-, tri-, as to polyphyle; i.e., derived from two, three, four, or more species or varieties of plants. Such are, e.g., the greenhouse *Rhododendrons*, which often combine four species.

The author observes that any one character may be considered apart from the rest, so that it is not necessary only to deal with pure monohybrids. It is sufficient simply to pay attention to the particular differential character selected of the hybrid in question.

The law governing the dissociation is very clear, as we shall see. He takes monohybrids for simple illustration, the two forms from which they are descended being only distinguished by a single character, wanting in one but present in the other parent; as, e.g., a cross between a blue and a white-flowered plant of the same species. The hybrid can in this case have no intermediate colour, but only the same blue as the parent. Since the units are not divisible in the offspring, these two qualities are dissociated.

This is well seen in *Petunias*, the result of crossing the purple *P. violacea* with the white-flowered *P. nyctaginiflora*. The plants with which M. de Vries experimented were:—*Veronica longifolia*, blue × white; *Viola cornuta*, blue × white; *Trifolium pratense*, red × white; *Aster Tripolium*, blue × white; and *Solanum nigrum*, fruit black × fruit yellow, &c.

In the hybrids (or crosses) between colours and white, one of the two is invisible, but potential,* i.e., in the above flowers, the white; similarly *D. Stramonium*, spiny × non-spinescent, has spines; and *Lychnis vespertina*, hairy × glabrous, has hairs; but the second generation gives rise to some non-spinescent and glabrous forms respectively.

Taking the simplest case, when a hybrid or cross partakes equally of the characters of the father and the mother, the theoretical results will be as follows: let D stand for the dominant and visible feature, P the potential one. The hybrid has $\frac{D + P}{2}$ characters. Now, theoretically,

this applies to the pollen and ovules, as all other parts. Half the pollen and half the ovules would be "D," and the other half "P." Suppose the hybrid to be self-fertilised, four results are possible, viz. :—

- (1) 25 per cent. $D\delta + D\delta$.
- (2) 25 per cent. $D\delta + P\delta$.
- (3) 25 per cent. $P\delta + D\delta$.
- (4) 25 per cent. $P\delta + P\delta$.

As P is invisible, the result will appear as if 25 per cent. were white (i.e., P) (4), and 75 per cent. coloured (i.e., D) (1) (2) and (3)).

The first law, then, is: The grains of pollen and the oospheres (embryo egg-cells) of mono-hybrids are not themselves hybrids; and the result of self-fertilisation is to make 25 per cent. of the

offspring to be like the grandfather (1), 25 per cent. like the grandmother (4), and 50 per cent. are hybrids (2) and (3). From this he deduces the second law:—The descendants of monohybrids are composed of 50 per cent. pure (i.e., like the grandparents), and 50 per cent. like the hybrids of the first generation.

(To be continued.)

THE ROSARY.

HYBRID TEA ROSES.

Of all classes of Roses, this is perhaps the most valuable, combining, as its widely different varieties do, the strength and vigorous growth of the Hybrid Perpetuals with the exquisite fragrance and refinement of the Teas. Doubtless the pure Tea Roses have more grace of form and delicacy of petal; they have also richer colours, in many instances at least; but the hybrid Teas, such, let us say, as *Madame Pernet Ducher*, *Marquis of Salisbury*, and *Gustave Regis*, especially when their flowers are only half expanded, are in no way inferior to the finest Teas, in what may be called impressiveness of aspect, in artistic fascination. *Gustave Regis*, when its buds are just beginning to exhibit their colour, is more beautiful at that stage of its floral development than any Tea Rose with which I have the privilege of being acquainted; yet it is far from possessing the full beauty of *Catherine Mermet*, or *Madame Lambard*, when entirely blown. Yet with the hybrid Teas such comparative imperfection, for lack of petals when fully expanded, is undoubtedly the exception, and not the rule. It is by no means characteristic of the English hybrid Teas. Mr. Wm. Paul's beautiful *White Lady*, for example, is a commanding Rose; it has sufficient petals, in addition to other attributes, to make it almost an ideal Rose for garden decoration. It opens more easily, I should suppose, than its fuller derivative entitled *Tennyson*, which, as my garden is somewhat too shady (by reason of my love for coolness and umbrageousness), I have not yet ventured to add to my collection, lest, like that magnificent H. T. Rose *Madame Joseph Combet*, it should prove too arduous of floral expansion.

Four of my supreme favourites among Hybrid Tea Roses are *Clara Watson*, *La France*, *Viscountess Folkestone*, and *Caroline Testout*. The first-mentioned variety, which is quite worthy of occupying the premier place—at least in my estimation—is equally attractive in summer and in autumn; which is more than could be said for the great majority of Roses, though this so-called perpetual habit is quite characteristic of the hybrid Teas. *Clara Watson*, whose colour has been described by its eminent introducer as "pearly-white, tinted in the centre with pale rosy-pearl," is not so widely known or so extensively cultivated as it ought to be. I am glad to find that its great merits are recognised by the Rev. H. D'Ombraun, who may be said to have lived among Roses all his life; also by Mr. Edward Mawley, who cultivates his garden treasures at Berkhamsted in Hertfordshire, a beautiful region inseparably associated with William Cowper's much-venerated name. *Clara Watson* is generally supposed to have been raised by Mr. Henry Bennet; it was introduced after his death by Mr. George Prince, of Oxford, in 1894. Of all hybrid Teas the most popular, and certainly one of the most beautiful, is *La France*, one of the noblest creations of the late M. Guillot of Lyons; which, however, I find much more reliable (so far as regards perfection of form) in summer than in autumn. By reason of the purity and delicacy of its petals, it is easily tarnished by the influence of heavy rain, and might therefore be regarded as a fine-weather variety. It does not always (unlike *Clara Watson*) come absolutely perfect in form, even during the early summer months; but when atmospheric conditions are inspiring, *La France* is usually exceedingly fine. Its bright, silvery-pink

complexion, on a calm summer evening, amid the glow of the twilight, is memorably artistic. Hardly less fascinating is *Viscountess Folkestone*, whose charming salmon-pink and creamy hues, combined with its dimensions and uniquely attractive fragrance, render it a dangerous rival of *La France*. *Caroline Testout*, which is deservedly a special favourite with all Rose-cultivators, is one of the most reliable (and not the least decorative) of all Roses for garden cultivation. It is especially valuable by reason of its free-flowering attributes in the late autumnal months. My friend, the Rev. W. Wilson, M.A., minister of the Trossachs, beside Loch Katrine, who is a great lover and cultivator of the Rose, regards *Caroline Testout* as his most precious floral possession. A still more refined Rose, especially in bud form, though much less vigorous and floriferous here, is Mrs. W. J. Grant, raised by the Messrs. Dickson of Newtownards, in Ireland, and introduced by them in 1895. It is a lovely pink variety, but it constantly manifests, when grown in my own garden, a lack of vigorous capability; in all probability, the result of what is termed over-propagation, that is greatly to be deplored. *Bessie Brown*, for which we are also indebted to the famous Irish rosarians, and *Aurora*, a bright native of Waltham Cross, are valuable varieties of recent origination. Older and more familiar Hybrid Teas of great merit are *Marquis of Salisbury* and *Bardon Job*, *Marquise Litta*, *Marjorie*, *Lady Mary Fitzwilliam*, *Kaiserin Augusta Victoria*, *Augustine Guinoisseau*, *Ethel Richardson*, *Grace Darling*, and *Gloire Lyonnaise*. *David R. Williamson*, *Kirkmaiden*, *N.B.*

ORANGE GROWING IN CALIFORNIA.

To those who are interested in fruit-growing, one of the most interesting sights in one of the two great horticultural tents in the late Paris Exhibition, was the display of fruit staged by the Arlington Heights Fruit Company. If one can believe literally everything which has been said and written about Riverside, "the greatest Orange-growing district on earth," this place comes nearest to the earthly paradise of which the mediæval poets and prose-writers dreamed and spoke. Its advantages are bewilderingly numerous, and, *inter alia*, "it has no millionaires and no paupers!" The delights of Riverside, and the enterprise of the Arlington Heights Fruit Company are duly set forth in a dainty little pamphlet, and when our dear cousins across the water take up the cudgel—in this case it is a pen, we know that they are not going to be unpleasantly modest about their own achievements. The present writer would gladly respond to the "Greeting and invitation from Riverside," but the little pamphlet is silent on the "incidentals" of passage-money and hotel bills! But the facts quoted in the pamphlet are of very great interest, and California is undoubtedly a wonderful country, whilst "Riverside is the exponent and example of the highest development in California—material, moral, social, intellectual." He must be a cantankerous person who wants more than this. Mr. Chauncey M. Depew tells us that a man who owns 30 acres in California is a country gentleman. "He does just about work enough to keep himself in good physical condition, and clears from 3,000 dollars to 4,000 dollars a year. I know one man who makes 3,000 dollars a year on 10 acres of ground. They press the button, and Nature does the rest."

The orchard area of Riverside is 30 square miles, or 19,200 acres, in which are growing 1,536,000 Orange-trees, so that until some other district can adduce figures in excess of these, the claim of Riverside to be the greatest Orange-growing locality in the world must remain undisputed. These trees are planted 20 feet apart, and the produce for this season is estimated at about 318,024,000 Oranges, and the product of this district is stated to be one-third of the output of the State. The money value of this enormous quantity is calculated at 6,000,000 dollars, or an

* The author uses the word "recessive;" but "potential" is a more familiar term in English.

average of over 671 dollars for every man, woman, and child, in the district. Although Oranges are shipped from Riverside every month in the year, the bulk of the crop is exported between Dec. 1 and May 1. Riverside is especially favourable for the cultivation of the Orange, for it has all the essential elements of success: an ample water supply, the proper soil, the right altitude, and the absence of fogs. The selling value of Orange (bearing) groves vary from 500 to 2,000 dollars per acre. The most favoured variety in the Riverside district—where indeed it may be said to have been raised—is the Riverside Washington Navel, the king of Oranges: it has stood the test of twenty-five years' cultivation, and maintains its superiority.

Riverside, in its Magnolia and Victoria Avenues, possesses "two of the most famous avenues in the world;" their combined length is 20 miles, mostly through continuous Orange-groves, and within the limits of the city; whilst in the city park may be seen the largest and finest collection of Cacti in America, "if not in the world." *W. Roberts.*

VARIATIONS IN ENOOTHERA LAMARCKIANA.

In the *Comptes Rendus*, for October 1, M. Hugo de Vries has an important paper on the "Mutability of *Enothera Lamarckiana*," in which he describes a number of new forms which originated suddenly in his experimental garden without any apparent cause, and which he has had under observation for the last twelve years. These changes have arisen without cross fertilisation, are to a large extent permanent, and have been reproduced from seed for several generations.

We may add that *E. Lamarckiana* does not always show this great and sudden mutability. We have grown the plant by the score for many years in our garden, and have watched hundreds of them in a piece of waste ground for years without ever seeing indications of such mutability as M. de Vries has done, nor has a recent search brought any such variation to light. Still, that fact by no means invalidates the results of M. de Vries' careful experiments:—

"Species in the wild state almost always show themselves upon direct observation to be immutable, although very polymorphous; that is to say, that the seeds of a single individual may reproduce all the forms, while in a species endowed with mutability, individuals appear with new characteristics, and which, isolated, reproduce themselves.

In cultivated plants mutability is usually, in great part only, merely apparent; it is rather a state of polymorphism, than a phenomenon of change. Forms really changed under cultivation almost always owe that property to hybridisation.

It is very rare to find a pure species in a state of mutability. The *Enothera* of Lamarck, which I have cultivated for more than twelve years in my experimental garden, has displayed this mutability. It constantly produces new forms. The greater part are incapable of normal development, and often die without forming seeds; others are completely sterile. Still, there are seven that are reproduced from seed in a sufficiently large proportion to permit of careful study.

These seven species are: *E. gigas*; *E. albida*, with very narrow whitish leaves, pale yellow flowers, and short fruits; *E. oblonga*, with oblong petiolate leaves, a short stem ending in a dense spike, with flowers less large than those of the mother species, and small fruits; *E. rubrinervis*, with a stem rendered fragile by the imperfect development of the woody fibres; *E. lata*, rendered female by the complete abortiveness of the pollen (accompanied by an abnormal development of the internal cellular bed of the wall of the anthers), and very easy to recognise owing to the size of its organs; *E. scintillans* has narrow dark green, somewhat shining leaves, and small flowers and fruits; and *E. nanella*, a dwarf form only a few inches high.

E. gigas has shown it but once; the other species have produced it more or less regularly in each generation, and often in a somewhat large number.

E. Lamarckiana was cultivated during three generations, from 1886 to 1891, as a biennial. The seed bearers, to the number of from six to ten in each generation, flowered each time in a well isolated bed. The five generations following were annual (1895—1899); the seed bearers flowered in parchment bags, and were artificially fertilised.

Observations made annually upon this experiment, and on seedlings from seeds of a certain number of the transformed individuals, lead to the following conclusions:—

1st. The new species appear suddenly, without intermediary or preliminary forms; the transformed individual displays all the characteristics of the new type, although itself the issue of perfectly normal parents and grandparents.

2nd. The seeds of transformed individuals all show the new type without any reversion to the characteristics of *E. Lamarckiana*. They remain fixed from their first appearance. They may therefore be considered as new species. However, *E. scintillans* is an exception to this rule, only a third being reproduced, while in others two-thirds or rather more are reproduced. *E. lata* is purely female, and can only be reproduced by crossing with the mother species, or with other forms; its degree of fixity cannot therefore be determined.

3rd. The new forms are distinct in almost all their characteristics from the mother species, and in that correspond to the small species of the botanist, and not to the varieties of cultivated plants. *E. nanella* alone may be regarded as a dwarf species.

4th. The new species are usually represented by a comparatively large number of individuals, either in the same generation, or in a series of generations. Their number may be estimated at from one to three per hundred. This observation appears to confirm the ideas propounded by M. W. B. Scott, on mutation, deduced by him from the continuity of paleontological series.

5th. The characteristics of new species present no obvious relation to those of ordinary variations from the mother species. Mutability appears to be independent of variability.

New characteristics appear without any definite direction, as is postulated by the great Darwinian principle of evolution. They affect all the organs, and may alter them in every sense; the changes are sometimes harmful, sometimes ineffective, sometimes perhaps even advantageous to the subjects. The greater part of the forms described are more feeble or more fragile than *E. Lamarckiana*; *E. gigas* alone appears to be, in all respects, more robust. Many of the forms are sterile; but these have not been considered in this report."

LETTUCE GROWING IN MASSACHUSETTS.

It is probable that very few people outside of the district have any idea of the extent to which Lettuce is grown in greenhouses in the vicinity of Boston. Located particularly in the towns of Arlington and Belmont, this industry has seen in the past few years an almost phenomenal development. Individual growers estimate the space in their establishments covered by modern forcing-houses in acres, and single-houses with a length of five and even six hundred feet or more are to be seen. Greenhouse Lettuce is also grown in other parts of the Commonwealth, and the industry is increasing near all the larger cities and towns, but no other portion of the State and very few in the entire country can compare with the Boston district, where a large part of the Lettuce for the markets of New England, as well as New York city and beyond, is grown. No better example can be found of a highly specialised agricultural industry. From the time when the first crop is matured in early winter until (according to the general practice) Cucumbers or Tomatos are put into the houses in the spring, Lettuce is turned out

very nearly as regularly and methodically as are the products of the mill or factory and handled by equally business-like methods.

LETTUCE AS A CROP.

Lettuce is not an easy crop to grow under glass successfully and profitably. This is true for two reasons, one from the nature of the marketable product, the other on account of the peculiarities of the plant itself. Cucumbers and Tomatos may be gathered, to some extent at least, from plants poorly grown, more or less diseased, or in other ways not well developed. This will of course cause a loss, but not a total loss, in the product. But with Lettuce the case is different. Here the whole plant is marketed and forms the edible portion. Consequently it must be well grown, sound, perfect, and of good size and texture, or, in competition with the large amount of Lettuce of the best quality which is almost always on the market, the small margin of profit which even the best goods bring will fail to be realised. This, therefore, is one reason why it is not easy to grow Lettuce on a large scale with profit. Furthermore, there is no crop grown under glass so easily influenced by unfavourable conditions or improper handling. This applies particularly to temperature and moisture, conditions toward which this plant is vitally sensitive. With this combination of circumstances, a most sensitive plant to handle and a perfect product demanded, it is to be expected that much failure would occur. Even the best growers have trouble with their crops, sometimes experiencing severe loss, and the fact that they reach the success they usually do shows their great practical knowledge of the plant and its growth. In fact it may be said that the Lettuce growers of the Boston district, with a few others in various parts of the state, cultivate this crop with a degree of skill and success unequalled by any other class of vegetable growers, and represent to-day the most successful, the most skilful, and above all the most business-like, up-to-date, and thoroughly wide awake agriculturists of the State. *Bulletin No. 69 of the Massachusetts Agricultural College.*

ZONAL PELARGONIUMS AT WOODHATCH, REIGATE.

VERY fine shows of *Chrysanthemums* can just now be seen in most good gardens, and they vary very little. In some one sees, as at Woodhatch, some of the newer ones, and a general show that is wonderfully fine. In some others the display is moderate. But still, in all cases these *Chrysanthemums* shows are somewhat stereotyped, not varying much from year to year or one from the other; but the show of zonal *Pelargoniums* at Woodhatch is a rarity. One may visit a thousand places or gardens and not see such a splendid lot of these beautiful plants in full bloom in November as can be seen in this Reigate garden at the present moment. It is not a new feature here, for each autumn and winter a brilliant display is seen; yet this time it does seem as if the plants were better grown, more superbly bloomed, had finer pips and trusses, and included many newer and most beautiful varieties. The plants are growing in a span-house on flat stages with a centre alley; they are all in 6-inch pots, having been raised from cuttings, taken off, and inserted into pots filled with sandy soil, and stood in heat last February. From that time onward they were slowly but sturdily grown, the plants in no case being pushed or forced. From the cutting-pots, when well-rooted, they were shifted into large 60's, and in these kept on a shelf near the glass, where, in ample light and air, stout, hard growth is made. Later, they were placed into 6-inch or flowering-pots, the compost being three-parts good turfy loam, the rest old hotbed-manure, leaf-soil, and sand. The potting in this case is very firm. About the middle of June the plants were stood out-doors in full sunshine on a hard ash-floor, and there kept pinched to prevent

flowering, and also to create bushiness. Watering had to be regular, and as the pots became full of roots weak liquid-manure was given twice a week. Should thrips attack the points of the shoots, a trouble that seldom happens when soil is good and watering regular, they are lightly syringed with Gishurst-compound and saturated tobacco-liquid. It is good practice to turn the plants occasionally that they do not become drawn all one way. They are housed towards the end of September, all pinching having ceased about the end of August. Most certainly not under any conditions of culture could plants be in better health, or carry longer stems and nobler blooms, than do those at Woodhatch, of which Mr. Salter has so much reason to be proud. There are some 150 of them in all. The colours of the flowers are most delicately refined and beautiful. Really, to those who still like zonal Pelargoniums, such a sight as these plants present just now, is worth going many miles to see. As showing how many of these zonals will do well as winter bloomers, it is enough to say that in the Woodhatch collection there are some forty distinct varieties. Of these a list of thirty-four in colours is here given, and whatever may be the merits of others grown elsewhere, certainly this selection must be one very hard to beat. Of whites, Snowdrop, Margaret, Mary E. Wilkins, and Sir Perceval. Oculated or salmon coloured, Beauty of Kent, Lady Saunders, Mrs. Gordon Lindsay, Ian Maclaren; reddish-carmine, Phyllis, Kate Farmer, Opal, Coleridge; pink, Mrs. Robertson, Gertrude Pearson, Lady Russell, Edith Miller; cerise, Herma, Herries, Cerise, and Lord Rosebery; scarlet, Charles Major, Lilian Duff, E. Pridwell, Byron, D. B. Crane, Burns; of crimsons, Nicolas II., King of Crimsons, Souvenir de J. Miller, Volcanic; violets, Sir H. Irving, Sir J. Kitson, Royal Purple, H. J. Jones. Thus, every shade or hue is well represented, those varieties classed under colours, with the exception of the white, differing in shade appreciably. Hence, one of the great charms of the collection is that, whilst many seem nearly to resemble each other, they all have some diversities in shade or form. A few plants have more compact habits than others, and these stand in the front row; those naturally taller are placed at the back. It is not possible to over-estimate the remarkable beauty of the colouring of the flowers at this season of the year. Possibly much is due to the modified light through which seen, but something is due also to the undoubted stoutness of the petals and the rich gloss found on them.

I am sure, could this splendid batch of plants but be arranged with foliage plants as a group at the Drill Hall, it would secure a Gold Medal award with the greatest ease. Absolutely no other plants in flower just now could excel in beauty these glorious zonal Pelargoniums. *A. D.*

TREES AND SHRUBS.

THE SCARLET OAK (QUERCUS COCCINEA).

THERE are several American species of *Quercus* known as "Red Oaks," of which *Q. coccinea*, *Q. rubra*, and *Q. palustris*, are the best known in our gardens and parks. There is much confusion as regards the identity of these three trees, the names apparently being used almost indiscriminately. Roughly, however, they may be distinguished by the size and lobing of the leaves. *Q. rubra* has the largest and least deeply lobed leaves; *Q. palustris* represents the other extreme; whilst *Q. coccinea* is intermediate in both characters. All of them turn more or less red in autumn, but *Q. coccinea* (especially the Knap Hill form called *splendens*) is the most brilliant. The leaves this autumn turned a bright scarlet-red. The Knap Hill variety has the additional good quality of retaining its leaves and colour till nearly Christmas. It is worth planting in groups for autumnal colour effects alone. When once established in good soil all the Red Oaks grow

quickly. The leaves of *Q. rubra* turn a dull rather blotchy red, and do not compare with those of *Q. coccinea*. *Q. palustris* is a free-growing, very graceful tree, but I have never seen it turn so fine a colour either. This may be due to soil or position, for it is sometimes highly spoken of. I suspect, however, that the trees referred to have been *Q. coccinea*—the two being, as already stated, frequently confused. *W. J. B.*

VEGETABLES.

RETARDING AND FORCING SEAKALE.

DURING the past month a new method of obtaining early produce from Seakale has come into use. I may be wrong in terming it a new method, but at the least it is new to me, and I do not remember any mention of it in the pages of this journal. [See *Gard. Chron.* for November 3, p. 324. Ed.] The method of retarding of flowers, and roots and bulbs, are pretty generally known to gardeners, and the same process is now applied to Seakale roots. This will render the production of autumn Seakale an easy matter, as well as late spring production. The retarded roots will enable gardeners to send Seakale to table in the month of November. Many gardeners have the conveniences for forcing, but cannot obtain it early in the autumn in other ways. It is always necessary to mature the crowns thoroughly, or the results are poor in quality. There are some persons who object to eating forced vegetables generally, who may, however, not consider retarded roots any improvement. Still, retarded roots need very little forcing by means of strong heat. In the last few years the older method of forcing in the open ground has been less practised, and lifting the roots and forcing the produce in heat have taken its place. In my opinion Seakale produced by this method is inferior in flavour to that obtained from plants growing in the open, the shoots being less tender, and succulent and crisp. I think the market-grower's method of forcing is superior to that practised in private gardens, that is, to place the roots in wide trenches and cover them with hot litter, the Kale grown in this manner being as tender as that obtained from beds in the open, using pots and fermenting material around them. The gardener in a private establishment not requiring large quantities at a time, finds it convenient to force Seakale in the Mushroom-house or cellar, where there is a degree of aridity not present in the other method. With proper attention to damping down, sprinkling walls, &c., very good Seakale is obtained, but it is never quite equal to more naturally grown produce.

By whatever method Seakale is forced, the degree of top-heat should never exceed 60°. Thus, mild forcing may entail a longer wait at the commencement of the season, but after that, if successional supplies of roots are dug up and forced, there should be no break in the supply so long as the stock of roots last. Only dryness in the air must be combated by damping the house down daily, or more often, and it may be necessary to apply water to the soil in which the roots are plunged.

I would strongly advise those who can do so to follow the open-bed method, the Kale being better eating and finer as regards size of shoots. Forcing in trenches is of use for early supplies. As to retarded roots these need but little forcing; indeed, they can be grown in a cellar, and the growths then resemble those of naturally grown Seakale from beds in the open. Such roots on being received should be kept covered over and not exposed to the air. I have observed excellent results from retarded roots placed in the soil in trenches out of doors, and securely covered with small quantities of warm litter. *G. Wythes.*

JERUSALEM ARTICHOKE AS SHADE PLANTS.

Those gardeners about to lift the tubers of the Artichoke should give a thought to one use to which these tall-growing plants may be put in the summer

months in those gardens which are not well, or not at all provided with high walls. It is necessary in high summer for Lettuce, Spinach, Radishes, Cauliflowers, Strawberries, for late fruiting, and Violets intended for winter culture, that the seed-beds and plantations, as the case may be, should be situate in partially shaded spots, otherwise the plants are of short duration, or of inferior quality. The gardener's usual resort is to borders on the north side of a wall or tall hedge. Failing this convenience, he must select the sunless side of some tall-growing crops as Runner Beans and Peas, the rows of which, however, usually are made to run from north to south, thus only very partial shade is obtainable for his beds, &c. Why could not the Jerusalem Artichoke be planted in double or triple rows in certain parts of garden as shade plants? We know that, given better ground than that usually afforded, the tubers would be finer than we see them as a rule, and the plant would be put to a useful end whilst growing. Some persons may object to the planting of the Artichoke in the kitchen garden at all, and would always relegate it to some out-of-the-way spot, and this on account of its ungainly habit; but I venture to say that a few long Bean-stakes or Hop-poles stuck into the rows at 12 to 15 ft. apart, and strands of tarred twine passed from pole to pole, would make them quite acceptable in the kitchen garden. The better method of planting a quarter, would be to commence by measuring off say 20 yards or less at the south side, and there plant two or three rows of tubers, then measure off a space of 20 ft. for beds, then plant three more rows of tubers and so on to the north side of the quarter. These free spaces could then be laid out in beds of 4 feet in width for the purposes designated above as occasion might require. Such shaded spots afford ideal situations for Vegetable-Marrows, Gherkins, and Cucumbers; and with rows of boards on which to place pots for Indian Azaleas, Camellias, Fuchsias, Balsams, and other plants that do not like full sunshine, or of which it may be desirable to retard the flowering in the summer months. Such screens being removable annually, afford a change of aspect in a kitchen garden not capable of being produced by the shifting of other kinds of vegetables. To impart a little floral beauty to so utilitarian an arrangement, Sweet Peas, Hollyhocks, and varieties of Dahlias might be employed on the outsides of the rows of Artichokes. *M.*

WINE - GRAPES.

THERE is no doubt that certain Vines which are grown on the Continent for wine making, will ripen their fruit in the south of England. I have on trial between twenty and thirty different kinds, and at the meeting of the Royal Horticultural Society on the 6th inst., I showed four different kinds of Grapes, the produce of some of these. They were as follows:

Portugais bleu, and Linnée—black.

Sulivan and Lignau—white.

Of course, the fruit is not to be compared in size with Grapes grown under glass, and with every care of the grower for table use. The first, Portugais bleu, has a very interesting flavour. M. Salomon, of Thoméry, from whom I obtained these Vines, says this of it in his catalogue:—"Très vigoureux et très fertile . . . Réussit dans tous les sols, surtout dans ceux réputés arides. Produit un vin de très bonne qualité, et en abondance."

I find this Vine very vigorous in my garden. Its berries are small, but this may be due to want of proper cultivation; moreover, it should be noted that this year the spring was cold, and the outside Vines started late. Even the Hawthorns here were a month late. It should be also noted that I have not grown them for the purpose of making wine, but with the object of testing whether some of these wine Vines would mature their Grapes in this climate and soil. Mine are trained over a pergola. Had they been planted and trained vine-

yard-fashion, they would have got not only direct sunheat, but also that reflected from the ground.

I am informed that at Lewes a cottager makes his own wine every year from Sweetwater, which he grows on the walls of his cottage. Between Brighton and Lewes, along the railway, there is what seems ideal land for vineyards. It consists of gentle slopes facing the south, and on this land are grown Wheat, Barley, Turnips, Rape, &c. On the high parts of the Downs, where the soil is only a few inches deep, and sheep graze, only grass and lowly plants will grow, so that on the lower slopes of these downs there is usually sufficient soil for the Vine.

M. Salomon informs me that one of his customers is going to plant 4,000 Vines of Portugais bleu, and Madeleine royale in Surrey, and that M. Salomon will probably come over to show his customer how to plant them. So, perhaps, a new beginning, the cultivation of the Vine out of doors, and making of drinkable wine, will be made in other places beside those initiated by the late Marquis of Bute.

There are probably some millions of pounds going yearly to foreign countries for the purchase of wine, and it seems strange that while in this country agricultural prospects are poor, no serious attempt has been made to form vineyards in the south of England to arrest some of the millions now sent away. *E. Bonavia, M.D., Worthing.*

[Has our correspondent included in his trials the variety Gammy Noir? This has proved most valuable at Cardiff. ED.]

MASDEVALLIA DEORSA.

THIS singular-looking Orchid was exhibited by Sir Trevor Lawrence, Bart., along with other botanical curiosities at the meeting of the Royal Horticultural Society on Tuesday, November 20. The showy flower is of a yellow colour, blotched with wine-purple, and, together with the leaves, it hangs, as it were, head downwards, hence the specific name. The plant, as shown, possessed one flower (see fig. 121).

NOTICES OF BOOKS.

A HANDY BOOK OF HORTICULTURE: AN INTRODUCTION TO THE THEORY AND PRACTICE OF GARDENING. By F. C. Hayes Murray.

THE author has had some experience in the wants of the class for whom he writes, inasmuch as he has been—and perhaps is still—a lecturer on practical horticulture in Alexandra College, Dublin. Like most lecturers he has been unable to find a book suitable to his purpose, and so he has written one himself. The author deals principally with practical details, and deals with them clearly and sensibly. The descriptions of the plants are, however, very meagre; and the spelling of the names leaves much to be desired. A Calendar of garden operations for each month in the year is supplied, and what is more unusual, a series of examination papers. What class of examinees the author had in view we cannot tell. We should not like to have to answer the questions. Here, for instance, is one question: "Enumerate the Filmy Ferns." How could one answer that, or the following question in the time usually allotted to examinations, especially bearing in mind that each is but one out of eight similar questions?—"Write a short account of the best way to treat Lilies, and give the names of some of the most important kinds."

PRINCIPLES OF PLANT CULTURE, by E. S. Goff. (Gay & Bird, 22, Bedford Street, Strand.)

THE author is Professor of Horticulture in the University of Wisconsin, and has designed this book as an elementary treatise for beginners in agriculture and horticulture. It begins with an explanation of the processes which constitute the round of plant life, and then passes on to the influence of unfavourable conditions, parasites and weeds. The details of propagation, transplan-



FIG. 121.—MASDEVALLIA DEORSA.

pruning, and plant-breeding are then explained. The book is intended as an accompaniment to practical work, hence numerous simple experiments are described, which the pupil is expected to perform for himself; and, at the end is given a syllabus of laboratory work, containing full details of the practical methods for self-instruction. There is an excellent index, and on the whole the book is one which we strongly recommend to teachers and pupils in our schools of horticulture. A better theoretical introduction to practical gardening we do not know.

PLANT NOTES.

CYPELLA PLUMBEA.

ALTHOUGH an old garden plant, known generally under Dean Herbert's name for it, viz., *Phalocallis plumbea* (*Botanical Magazine*, t. 3710), this handsome Irid had almost gone out of cultivation, when it was again brought into prominence by Mr. W. Thompson, of Ipswich, in whose *Catalogue of Flower Seeds for 1898* it was offered under the name of "*Herbertia platensis*, a very pretty Irid from La Plata, and as it is said to flower the second season from seed, its correct name will soon be determined. Meanwhile it is described by its introducers as producing from a bulbous root a tuft of linear plicate glaucous foliage nearly a foot high, from which arise several branched scapes bearing a succession of Tigridia-like flowers of a deep blue colour, with a white and yellow centre. They are from 2 inches to 3 inches in diameter, and are very showy, though, like many other Irides, somewhat fugitive. It succeeds in the open border in summer, but is said to need some protection in winter, which will probably be best given by its removal to the greenhouse or vinery."

Plants raised at Kew from seeds obtained from Mr. Thompson flowered last year, and were identified by Mr. Baker as *Cypella plumbea*. It has also been called *Alophia platensis*, but the genus *Alophia* is merged partly in *Herbertia*, partly in *Cypella*. Bulbs of it have also been introduced to Kew from Montevideo, and these, planted in a loamy soil in a sheltered border facing south, have flowered intermittently since midsummer, and are still in flower. The leafy scape is erect, 2 to 3 feet high, with lilac-blue flowers 3 inches across—not unlike those of *Marica cœrulea*. As is the case with many of the plants of this order, the flowers are very fugitive, but they succeed each other quickly. Judging by the behaviour of the plants at Kew, the same treatment as suits the Tigridias will answer for this *Cypella*. It would probably be hardy in the south under a wall. The corms are ovoid, 2 inches long, orange-coloured, with fleshy wrinkled roots. W. W.

PLUMBAGO ROSEA.

Although introduced from the East Indies so long ago as 1777, this desirable species does not receive the attention its merits deserve. Flowering at the present time, when brightly-coloured stove flowering-plants are scarce, a batch of this stove perennial is very valuable. Its culture is comparatively easy—a mixture of good fibrous-loam, a small quantity of leaf-soil, and plenty of sharp sand, form a suitable compost; and good drainage is essential, the plant being impatient of much moisture at the roots. After the flowering season is over, a short rest is beneficial, but on no account must water be totally withheld. The plants should then be shaken out and repotted; as a rule 48's will be found the most useful-sized pots to employ. After repotting, a brisk moist heat may be afforded with advantage. When growth has well recommenced, the plants should be gradually subjected to a lower temperature, and during the summer months the warmer end of the greenhouse will be found to suit the plants. On the approach of cold nights, the plants must be brought back into the stove and afforded plenty of light, or the flowers will be lacking in colour. Frequent

applications of weak liquid-manure, and an occasional dose of soot-water, will be of great assistance. Propagation may be effected by division, or half-ripe cuttings firmly inserted and placed in the propagating-case will root easily. The variety "coccinea" bears larger and more brightly-coloured flowers than the species, and, of course, these remarks apply to the variety, as well as the species. A. C. B.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Artificial Warmth, &c.—During the winter the Orchid-house must be afforded artificial heat, in order to dissipate over-abundant humidity in the air, and raise the temperature to suit the occupants of the different glasshouses, the peculiarities of which must be studied. The figures given by me in the *Gardeners' Chronicle* for October 6 are applicable now, with modifications, according to outside conditions. The excessive use of artificial heat should always be avoided, more especially in the winter, when air can seldom be admitted in any great volume. If the heating apparatus should become very hot, turn the valves so as to reduce the heat, and open the ventilators that are situate near the ground-level a little more than usual, if the weather will allow of this being done, but do not damp down excessively. Cold winds are worse to cope with than frost with a still air; the injurious effects of an easterly wind together with the fire-heat necessary to maintain the proper degree of warmth in the houses are greater. At such times sufficient air filters into the house without opening the ventilators, and at night it should be kept out as much as possible by a covering of mats, canvas, tarpaulins, &c., and thus economise fuel, and spare the plants.

Disas.—These plants are difficult to manage in the winter, owing to the conditions necessary to their well-being being unattainable in this country, viz., abundant sunlight and a cool and moist atmosphere. The growth is young, and root-action is commencing, therefore a moist material at the root is essential, but our erratic climate obliges the gardener to withhold water as long as possible, an overdose during a spell of moist weather often causing the growth to damp off at the base. The specimens of *D. grandiflora*, *D. racemosa*, *D. tripetaloides*, and the various hybrids, should be staged near the glass in a cool, airy house, where fireheat is used only to prevent the entrance of frost, or to dispel too abundant humidity. The plants must be protected from cold draughts, although air may be admitted freely from outside in favourable weather. Green-fly on *Disas* must be removed with a soft brush, and thrips by dipping the growths in tobacco-juice for a minute or so, and then laying them on their sides to allow it to drain away, finally rinsing them in clean water.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of LICHETER, Abbotsbury Castle, Dorsetshire.

The Protection of Roses.—The Roses now claim the gardener's attention in the matter of affording protection against frost. Established grafted Rose bushes on the Briar or Manetti stock should have every shoot removed that springs from the stock, cutting as close as possible. It is always advisable to keep a stock of Manetti and wild Rose stocks in the reserve garden. Having thus cleared away suckers from the roots, and shoots from the stems, make the plants steady in the ground by tramping the soil close up around them. If the position be exposed, short iron stakes will be of service in steadying the plants, and standards should be secured to tall, strong stakes, passing a treble twist of cord between the stake and the plant, so as to do away with any chance of chafing occurring, or the stems coming into contact with iron—never good for any plant. Labels, in lieu of other methods of marking the plants, can be tied to the stakes, being then not liable to be lost. During open weather the Rose-beds should be dug over slightly, being careful not to damage the roots. If the bushes are vigorous, a mulch of short dung will suffice, the thicker part

of the mulch being put round about the stem or root-stock, then smooth the beds, if on turf, edging them neatly.

Newly-planted Roses.—These winter best if no rank manure is allowed to touch them or lie on the surface, bracken being used as a mulch by preference, pegging it down if this be considered necessary. Put a thickish wisp of the same round the collar and among the branches. Bracken does not hold water like hay or straw, and is a better protection against frost. The relative hardness of Roses may be determined roughly if the gardener, when pruning his Roses will notice the difference existing in the texture of the young shoots. Hardy Roses are longer and more vigorous, while tender species are less robust, and the shoots are softer and with more pith in them. This is a guide both to pruning and protecting the plants. Prepare stations for Roses, and plant Roses whilst open weather lasts. See that the drainage is good, and mix heavy loamy composts in readiness for planting. If land is to be trenched, use much short dung, road-scraps and charred earth, and bonfire refuse. A few days should elapse after trenching, to allow the soil to settle. Roses obtained from the nursery should be laid in water for a few hours before being planted, and do not plant any Rose in a hole that is too small to allow the roots to be laid out at full length. Always fill in with the finer particles of soil around the roots, and keep the point of union with the stock 2 inches below the surface. Make moderately firm, and do not plant when the soil is wet and sticky. Roses on their own roots are not so particular as to the depth at which planted. Tea and hybrid Tea Roses should always have a warm place in the garden, and then they flower well into the autumn, especially in southern counties. If Roses as bushes are planted 2 feet to 2 feet 6 inches apart, Violas, Aubrietias, Daisies, Pansies, Crocus, and other bulbs may be planted between them. It is a good thing to place here and there flat moss-covered pieces of rock as stepping-stones between the Roses for use in cutting the flowers.

PLANTS UNDER GLASS.

By T. EDWARDS, Plant Foreman, Royal Gardens, Frogmore.

The Plant Stove.—For the present the work will consist chiefly of cleaning the various plants. Allamandas and Clerodendrons will now be resting, and only as much water should be applied as will prevent the soil from becoming dust-dry. Plants of *Stephanotis floribunda* should likewise be kept on the dry side; and as the flowers spring from the new shoots, much of the growth may be removed. *Rondeletias* that have produced flowers may be cut back, and kept rather dry at the roots until they break. If any *Codiaeum*, *Dracæna*, or other plant, not a Fern, has become too tall, the tops may be cut off, potted, and the pots plunged in a brisk bottom heat. *Eranthemums* should be afforded manure-water occasionally, and the dead blooms removed every morning; as if allowed to remain they detract from the appearance of the beautiful blue colour of the fresh flowers. *Centropogon Lucyanus* is another bright winter-flowering plant which should be grown in quantity; it flowers again a second time if the terminal shoots are cut back one half their length. Cuttings root readily of this plant in bottom heat. The older plants throw up strong shoots from the root which, with proper attention during the summer, will flower profusely. *Sericographis Ghiesbreghtiana* is another old plant which seems to have met with neglect of late years, but which when well grown from cuttings annually, and treated similarly to *Libonias*, is a pretty and useful winter-flowering plant. *Clivias* should be kept rather dry at the root in an intermediate-house at this season, and until the flower-heads appear. *Gesneras* should be put into a light position on the stove shelves, and assisted with much-diluted manure-water. Do not wet the foliage.

The Greenhouses.—Afford water but seldom to *Azalea indica* and *Rhododendrons*; apply no artificial heat unless the glass falls below 45°; afford air freely in mild weather. Specimen *Azaleas* may now be trained as opportunities occur, leaving, however, some of the plants to grow naturally; from these, flowers may be taken for decorative purposes, *A. indica alba* and *Fielder's White* being capital varieties for cutting.

Freesias.—Spread out and afford support to the stems of *Freesias* before they become prostrate;

afford air day and night, and a minimum temperature at night of 45°; and use the syringe freely among these plants in order to check the increase of red-spider. Weak guano-water made in a tank with a small quantity of soot in a bag added, is a suitable aid to growth if applied twice a week. The earliest batch of plants may be removed to a slightly warmer house, but any kind of forcing is unadvisable.

General Work.—Repot Cinerarias, Humeas, Celosias, and herbaceous Calceolarias before they get pot-bound; the last named into the 6 to 8 inch pot in which they will flower. The potting compost may consist of loam two parts, dried cow-dung one part, and as much leaf-mould and silver-sand as will make the water pass away freely. These plants should be stood on a bed of coal-ashes, and grown cool, with abundance of air afforded, the heat being applied only when frost is imminent. Destroy green-fly by fumigation or vaporising. Pot stocks into 48's, making use of loam one-half, and well decayed manure one-half. Prick off Schizanthus to the number of eight or ten into 32's, using a rather light soil. Ordinary frames or pits, matted to keep out frost, are better for these than heated pits. Cannas should now be stored in a dry place, and old plants of Hydrangeas be stood on the floor of a shed where they will not become too dry at the root; a few degrees of frost will do them no harm.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

The Apricot.—At one time not so long ago it was the rule with gardeners to defer the pruning of Apricot-trees till the second or third week in the new year, with the result, if the weather became very cold, that the work was much delayed, and often not completed till the flower-buds were ready to burst. My experience of the Apricot is, that it being the most precocious bloomer of all our hardy fruits, pruning can hardly be done too soon, and when necessary to resort to spur-pruning, to perform this while the trees are yet clothed with leaves. In the former case, the cuts heal over some time in advance of the rise of the sap, and in both instances less, if any, gumming then ensues. [The idea was, that by partly unloosing the branches and shoots from the wall, untimely flowering was prevented. ED.] As the trees have cast all their leaves, the pruning may be carried out forthwith. This year our trees are bursting with flower-buds, and the wood is well matured. The pruning is the same as that recommended for the Plum. After pruning, let the trees be cleansed, and if scale is found on them apply a smothering dressing of clay, soot, and lime, made into a thick kind of paint. In training avoid shifting old branches out of their position for the purpose of better clothing of the wall, for, if they are but slightly bent or twisted, the sap-vessels get ruptured, gumming sets in, and the branches ultimately die. When the operations of pruning and cleansing are finished, clear up all prunings and the remains of the summer mulch, and remove the soil to the depth of 3 or 4 inches, if the trees are in need of top-dressing. For this purpose use rich loam three-quarters, lime-rubble a quarter, but make no use of manure other than bone-meal, mixing this with the loam. The Apricot being liable to loss of branches in the summer, keep a number of young trees in stock in order to be provided against losses. For this purpose maidens are to be preferred, planting them, if possible, where they may remain.

The Pear.—Cordons whose shoots were stopped at midsummer, and again at the end of the month of August, may now have the long shoots shortened. Young cordons which may not have reached to the top of the wall, may have the leaders cut back to firm wood, and to a wood-bud situated at the side of the leader. As some varieties, when grown as cordons, set many fruit-buds on the young leaders, shortening back requires close attention, or a fruit-bud may terminate the shoot instead of a wood. Aged, healthy trees, may be restored to a good fruitful condition by training in a shoot by the side of each old one, the old ones being removed when the young shoots are two years old. The fruit-bearing spurs on trees trained horizontally, should be shortened to three buds when they have got too long; and in the case of young trees, three shoots should be left, one for extending the stem, and two for forming a new tier of branches, these last being from 9 inches to 12 inches apart. Prune fan-trained Pear-trees on the

same lines as regards the spurs, and avoid any crowding the main branches. Thin out the wood, if necessary, in young trees, and tip or shorten back the future main branches in such a manner that an evenly-balanced head is formed.

Miscellaneous.—Prepare shreds, and clean wall-nails that have been in use by making them red-hot, then spreading them out on a stone floor, and when cool sort out the best and pour a little linseed-oil over them. Old shreds that are fit for further use place in a pot of water, and just bring it to the boiling point.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Rhubarb.—This year's Apple-crop was a good one, and in some places the forcing of Rhubarb need not be carried out till after the new year. The best crowns for forcing are those from three to five years old. It matters a great deal how and in what position Rhubarb has been grown; for instance, if in a shady position or from beneath fruit-trees, the roots are so much longer in starting. The early, red-stalked varieties are the best for forcing; the various methods of forcing advised for Seakale in a previous Calendar are suitable. Towards the end of January I prefer to force Rhubarb in the open with stable-dung and tree-leaves, so as to obtain a steady warmth of 60°; for quicker forcing bottom-heat is necessary, and when grown in hotbed frames, the glass should be matted up at night and also by day till the leaves begin to grow, as to do so makes the stalks tender. Leaf-mould or any light soil should be placed beneath and round the roots.

Mushroom-beds in the Open Air.—Beds which spawned the first week in October, although not so satisfactory as indoors, will begin to afford a fair supply of Mushrooms about the middle or end of the present month. After the recent rainfalls it will be advisable to examine the beds, for if rain has penetrated the covering, failure, more or less, will result. In such cases the old should be replaced with fresh litter 1 foot in thickness. Do not expose uncovered beds for any length of time if the weather be cold; thatched hurdles and dunnage mats make suitable coverings if placed in such a way as to throw off the rain and snow. As the weather gets colder, increase the depth of the litter.

Globe Artichokes.—Protect these plants. Before doing this a few of the suckers and all the flower-stems should be removed. The old plantation which it is intended to destroy, should be protected and left till the spring, they will want plenty of suckers for making new plantations. Where freshly-fallen leaves have been used for this purpose, straw or coal-ashes should receive a trial, as they do not need to be covered with soil to keep them from blowing about the garden.

Protecting Broccoli.—The plants for the winter and spring supplies should be heeled over in such a manner as to protect the stem from frost as much as possible, banking them quite up to the bottom leaves. So far, the plants have not been checked, but the necessary check will be given if heeling over is carried out. In setting about the work, dig out a spadeful of soil on the north side of a plant, and place the spade under it, heeling it over, the stem being covered with the soil taken out from behind the next plant in the row.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of PORTLAND, Welbeck Abbey, Worksop.

Vines.—To succeed the Pot-Vines, a mixed vinery containing Black Hamburg, Madresfield Court, and Foster's Seedling Vines, should be put in readiness to start by the second week in this month. An early vinery should be small with a restricted border, and it is an advantage if the border be entirely inside the vinery; or should it be partly outside, a thick bed of warm leaves and stable-dung in the proportion of two of the former to one of the latter should be got in readiness. In placing these materials on the border, they should be given a slight slope to the south. A covering of tarred felt, or other waterproof material, will keep the heat steady for a long period of time, and afford protection from rain and snow. If the Vines were pruned six weeks ago, and the wounds dressed with styptic, the vinery may be closed forthwith. On sunny days open the ventilators slightly

About the 12th, fire-heat should be applied in order to maintain the temperature at 50° to 55° at night, and on cold days; on sunny days the warmth may rise to 65°. Before applying fire-heat, afford a good application of liquid-manure, and well decayed stable-manure and soot mixed as a mulch. Damp the Vines several times a day in bright weather, and maintain a moist atmosphere till the Vines break.

Late Vines.—Continue the pruning and cleansing of these Vines as fast as the fruit is cleared off. After pruning the Vines, keep the vineries as cool as possible till the end of January. If the Vines are growing in inside borders, afford a layer of new soil and manure, an operation more frequently required by inside than outside borders. When the old soil is excavated to the depth of 1 foot or more, advantage should be taken of the roots being thus uncovered to moisten the soil with strongish liquid-manure before the new soil is put in. The new soil should consist of turfy-loam of good quality, crushed bones, fresh soot, and a small quantity of wood-ashes.

Strauberies.—For affording fruit in the month of March a batch of plants should be started early in this month; selecting them from the stock that was the earliest potted, preference being given to those with bold single crowns and abundant foliage, and that lies flat upon the soil, as such plants generally throw up good flower-spikes. Ascertain that the drainage is free, and that there are no worms in the pots. Do not remove healthy foliage, only the old dead leaves should be cut off. Loosen the soil on the surface, remove moss and weeds, and afford a light sprinkling of soot or other stimulant. Apply water in quantity just sufficient to keep the soil damp until the flower-spikes appear. The best place in which to place the plants is a shelf high up in a forcing-house facing south, affording a temperature of 50° by night, and 55° by day for three or four weeks. Ventilate freely on sunny days, and whenever the temperature rises above 55° without artificial heat.

THE APIARY.

By EXPERT.

Making a Honey Market.—A good deal of complaint has reached me lately in reference to the honey market, but if bee-keepers would only take into consideration that consumers of honey, whether in sections or run-honey, will only purchase what is nice and clean, a good deal of trouble to themselves and annoyance to the customer would be saved. The purchaser in the first place has to be considered, because if he received samples of honey in good condition from the consignee, and signs for the same, he is liable not only from the seller, but from the railway company. First, then, all honey sent away from the apiary should be clean, well packed, and labelled distinctly in large, red letters, "Honey, with care—this side up," so that a railway porter can see at a glance that the contents are breakable. Run-honey should always be strained, particularly honey from straw skeps, otherwise small pieces of brood-wax and bee-bread will be found in it. It will often be heard in an export town the remark that "If I raise run-honey I cannot sell it." Why is this? Because the honey is sent away anyhow, and not in a fit state to place on a table, the consequence is that no more orders are sent. Run honey must be clear, for if there is any sediment, whatever colour it may be, it must always be remembered that the shopkeeper who buys your produce always bears in mind the particular customer's goods which he can sell best, and which he buys accordingly.

Referring to Sections.—These are often sent away in a dirty condition, and not half filled, and sometimes with brood in them. This again deters buyers. The sections that are not good—and there are some in all apiaries—should be sold in the district in which the apiary is situate at a small price, or the honey extracted and used instead of candy-cake for winter use. The bee-keeper himself should at various times visit his local shows and see for himself how the different classes of honey are done up, staged, and packed. He should also find out the best honey for sale. The Dairy Show and Grocers' Exhibition at Islington would afford many valuable hints in Apian matters, and the officials are always pleased to give information about bee-keeping, and the best plan of exhibiting produce.

Stores.—All stocks should have slabs in sections of candycake placed on the top of the bars, the mild weather we are having now having caused the bees to rapidly consume their stores.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR DECEMBER.

TUESDAY,	Dec. 4	Royal Horticultural Society's Committee.
		National Chrysanthemum Society's Winter Exhibition (3 days).
TUESDAY,	Dec. 18	Royal Horticultural Society's Committee.

SALES FOR THE ENSUING WEEK.

MONDAY, Dec. 3.	Dutch Bulbs at Protheroe & Morris' Rooms.
TUESDAY, Dec. 4.	Dutch Bulbs at Protheroe & Morris' Rooms.—Clearance Sale of Fruit Trees and Nursery Stock at the Denmark Road Gardens, Carshalton, by order of Messrs. Brown & Smith, by Protheroe & Morris, at 12.
WEDNESDAY, Dec. 5.	Dutch Bulbs at Protheroe & Morris' Rooms.—Continental Plants, Roses, and Hardy Border Plants, at Protheroe & Morris' Rooms.
THURSDAY, Dec. 6.	Dutch Bulbs at Protheroe & Morris' Rooms.
FRIDAY, Dec. 7.	Imported and Established Orchids at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick. —41° 2'.

ACTUAL TEMPERATURES:—

LONDON.—November 28 (6 P.M.): Max. 50°; Min. 43°.
November 29—Dull, rainy, mild.

PROVINCES.—November 28 (6 P.M.): Max. 48°, S. Devon; Min., 40°, Shetland.

SPECIALISATION is one of the features of the age in which we live, and no one will attempt to gainsay its advantages. The field of work has become so vast and so intricate that no one, not even a lineal descendant who inherited the powers of an admirable CRICHTON, could hope to master its details. A division of labour has become imperative. But whilst this is so, it is worth while enquiring whether it is not desirable to place some limitation on the excessive subdivision that is taking place. One obvious restriction might be, that no one or no body of individuals should attempt to specialise until he or they have become perfectly well grounded in generalities, and until they are well satisfied that the balance of advantage is in favour of subdivision. To begin by specialising is to foster ignorance, engender confusion, and obstruct progress. But when the specialisation arises as a gradual process of evolution, it is an indication of healthy growth, which can but lead to useful results.

The Royal Society was established in 1660. At first it included all branches of natural knowledge, including horticulture, within its purview. Nearly a century later the Society of Arts was founded, the main object of this society being to apply the knowledge obtained by men of science and artists to the practical benefit of the community. In 1788 the Linnean Society was founded for the cultivation of natural history in all its branches, but neither the Linnean Society, nor the Royal Society, entirely satisfied the requirements of advanced gardeners, and so in 1804 the Horticultural Society originated, which became in due time the Royal Horticultural Society. Much more recent, indeed within the last quarter of a century or so, has been the evolution of the *Auricula* Society, the *Cactus* Society, the

National Chrysanthemum Society, the Carnation Society, the Dahlia Society, the National Rose Society, the National Tulip Society, the National Viola Society, and the National Amateur Gardeners' Association. The Pelargonium Society is defunct, and there are not many who regret its extinction. An Orchid Society has been threatened—indeed, one already exists in Manchester; and we have narrowly escaped a Sweet Pea Society.

If we now enquire what these societies do, and how they fulfil their allotted purpose, we have first to consider what are the objects which lead men to band themselves together into societies. These considerations are well set forth by Sir JOHN EVANS in his introductory address to the Society of Arts—

"A society," said he, "offers opportunities for discussion; brings men of similar ideas together, and substitutes collective and organised action for isolated individual effort. It affords means of publication, organises research, records discoveries, stimulates invention, and assists students by providing a common meeting-place and centre of action. Every scientific discoverer desires immediate publication of his work, both for his own reputation, and to secure the assistance of his colleagues. Every industrial inventor requires publication in order that he may secure the natural profits of his invention. A society systematises and arranges the science or study which is its subject-matter."

To these functions the horticultural societies add that of organising exhibitions where the finest results of skill and cultivation may be seen, and where a healthy rivalry between competitive practitioners may be encouraged.

To what extent do the numerous societies we have mentioned, and the countless societies in the provinces, act up to this standard? Do they contribute anything proportionate to their means and opportunities, to the education of the public or of the gardener, or to the increase of the general sum of knowledge? Are they not, to too great an extent, machines for furthering commercial interests, promoting exhibitions, and distributing prize-money—objects laudable in themselves, but which should by no means constitute the principal aim of a society? Is there not a great risk by thus specialising, of frittering away the advantages which accrue from membership of a large society with aims such as those Sir JOHN EVANS has formulated?

Would it not be better to affiliate all these minor societies to the parent body, leaving them entirely free to carry on their operations as they do now—giving them perfect home rule, in fact, under an imperial ægis. One subscription only would then be necessary instead of half-a-dozen, and if cash were required for prize-money, it might be obtained as it is now by private subscription.

"The Society of Antiquaries (we are told by Sir JOHN EVANS) has now brought into union with itself nearly the whole of the archaeological societies throughout the kingdom—or, at all events, forty-five of their number—which now hold an annual congress in the apartments of the Society in Burlington House. The results have been most satisfactory. Each society while retaining its own individuality has co-operated with the others in matters of common interest, and among other fruits of collective action, an annual classified and subject index of the archaeological papers of each year is now published.

"An arrangement by which the subdivision of a Society has been obviated, and which on the whole has worked in a satisfactory manner, has [also] been adopted by the Society of Chemical Industry,

which has branches in centres of importance on both sides of the Atlantic. These branches hold their own meetings, and discussions and reports of them are published in the Society's *Journal*, together with those of the meetings in London. This union of the metropolis with capitals in the provinces is further strengthened by the holding of the annual meetings of the Society sometimes in Liverpool or in some other important centre of chemical industry."

Some such measures as these might be adopted by the Royal Horticultural Society, which should thus extend its hospitality, not only to all the special societies, but also to all the horticultural societies of the kingdom. Affiliation, now nominal, would thus be rendered more real than it is now, and the evils of undue specialisation be counteracted by the benefits of co-operation.

Out-door
Flowers in
Winter.

MANY people are content to let the garden go in the winter, and forget all about it; but real garden-lovers find something to interest them all the year round, and, in fact, try to arrange it so that there is something to look at even in midwinter. There are many more flowers which bloom in winter out-doors than most people imagine; and the object of this article is to make suggestions as to the growth of winter flowers in the garden, and to show those who are not aware of it what a wide range of choice there is. All, or almost all, the plants and shrubs now to be mentioned have been figured in the columns of the *Gardeners' Chronicle*.

The most generally known winter flowering shrub is the Yellow Jasmine (*Jasminum nudiflorum*), which has the great merit of flourishing on a north wall, where few other flowering climbers will do any good. It is so easy to grow that it is a pity it should not be on every house or wall with a cold aspect, as in a fairly open winter it blooms more or less from November to February, and if a severe frost cuts off the bloom at Christmas, it will go on again when the frost is over. Moreover, if the buds are picked in frosty weather they will open well in water.

Another flowering wall-shrub is the Winter Sweet (*Chimonanthus fragrans*), which does best on a south or west wall. It is not only beautiful in the open in winter, but it lasts a long time in-doors, and, as it flowers upon the young wood, can be cut freely without any injury or disfigurement to the tree. It is a deciduous shrub, with brownish-yellow flowers, marked with purple inside.

The Winter Honeysuckle (*Lonicera fragrantissima*) is one of the most beautiful of the hardy shrubs whose flowers greet the new year. To bloom well in the rough weather of January, it ought to have a sunny sheltered spot on light soil, and if a piece of wall can be devoted to it so much the better. It is a deciduous shrub, and has a low, spreading growth when not trained to a wall; the flowers being pale yellow or creamy white. *Lonicera Standishii*, with hairy leaves, is equally useful as a winter-flowering shrub.

Other shrubs more or less winter-flowering are the Chinese Plum (*Prunus Davidiana*), *Daphne Mezereum*, the winter-flowering *Clematis* (*Clematis calycina*), some forms of Japan Quince (*Cydonia japonica*), several Heaths, the Wych Hazel, and others.

When we turn our attention to plants, the most precious of all winter-flowering plants is the well-known Christmas Rose, of which there are

two principal varieties, *Helleborus niger*, the true Christmas Rose, and *Helleborus maximus*, a stouter and hardier kind. The former blooms in December and January, and if once well planted in good, deep, rich, light soil, either natural or prepared, will grow well for years without much attention, in fact, it needs two or three years to get well established. A hand-light put over it in flowering time protects the flowers from frost, snow, and rain. Some of the Lenten Roses (*Helleborus orientalis*), too, may also be considered winter flowers, as they come into bloom in February; but then we have Snowdrops and Crocuses, so that we like to regard it as the beginning of spring. It may be here mentioned that the Giant Snowdrop (*Galanthus Elwesii*), may, in favourable situations, be had in bloom in the middle of January.

Some of the winter-flowering plants have this additional recommendation—they will grow where few other things will. The fragrant Winter Heliotrope (*Petasites fragrans*) is an instance. On heavy soils it will grow like a rank weed anywhere, no matter how wet and sheltered, or even how dry sometimes. It must not be planted near choice trees or shrubs, as it will get amongst their roots, when it is as hard to get rid of as the Bindweed, the roots of which are very similar. It blooms from November to January, and has Hyacinth-shaped heads of pale lilac flowers, very beautiful for cutting for the house. In the summer it is simply a mass of big, Coltsfoot-like leaves, and may be quite smothered up with summer flowers without injury.

Another very hardy thing, though a little more particular as to the soil it grows in, is the Winter Aconite (*Eranthis hyemalis*), which blooms in January, and is well known to all with its bright yellow flowers in the middle of a whorl of shining green. It will grow under the branches of spreading Fir and other trees, where there is moisture enough in the winter, though nothing would grow there in the summer. It does not like cold, wet soils.

There are kinds of Wallflowers, too, which make very beautiful winter flowers, blooming from October or November right on through the winter. They need a fairly dry and sunny position, as they suffer much less from frost under these conditions. Nothing makes a lovelier winter bouquet than dark Wallflowers and yellow Jasmine, mixed with the delicate sprays of certain small evergreen Barberries.

Among plants requiring more careful treatment are several winter-blooming Eastern Irises, *Iris stylosa* or Algerian Iris being the earliest to grow. It requires a warm, sunny border and a mild winter if it is to do much good, and thus is not so generally satisfactory as some of the other plants referred to. Crocuses, too, can be had to flower at different times all through the winter, but they get very much damaged by frost, snow, and rain.

Nothing has been said about the sweet Violet, which, though left to the end, is surely one of those flowers most worth growing. Its culture for winter-flowering needs an article to itself. Suffice it to say, that many varieties will reward good culture by the most lovely flowers through the winter, a garden frame being a great help—in fact, almost a necessity in ordinary circumstances.

The flowers suggested above are those which may be expected to do well south of the Trent, the further south the better. In very favoured places, such as the Isle of Wight, southern Hampshire and Dorsetshire, on the south

Devon and Cornwall coasts, the south-west of Ireland, and other places, the list might be much extended, even including Roses and bush Fuchsias—but those who live in such places will be too familiar with out-door flowers in winter to need the help of this article. Soils, too, are a very potent factor in the success or otherwise of winter flowers. Other things being equal, plants on light, dry soils have a decided advantage in the winter, as not only does a wet soil of itself kill plants in the winter, but the succulence of growth which it induces renders them an easy prey to the frost. The slope of the ground relative to the sun's rays, position with reference to neighbouring hills or woods, the elevation of the ground above sea-level, and the nearness or otherwise of water or marshy land, are all circumstances to be considered when planting winter-blooming plants.

LINNEAN SOCIETY.—On the occasion of the meeting on Thursday evening, December 6, 1900, at 8 P.M., the following papers will be read:—1, "On some new Foraminifera from Funafuti," by Mr. C. CHAPMAN, A.L.S., &c.; and, 2, "On British Thrifts," by G. CLARIDGE DRUCE, M.A., F.L.S.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Fruit and Floral Committees of the Royal Horticultural Society will take place on Tuesday, December 4, in the Drill Hall, James Street, Westminster, from 1 to 4 P.M. A lecture on "The Heating and Ventilation of Glass houses" will be given by Mr. A. DONALD MACKENZIE, at 3 o'clock.

SIR JOSEPH HOOKER has been elected one of the Foreign Associates of the French Academy of Sciences, Institute of France.

"BRIGHTON IN ONE HOUR."—This is the title of a little illustrated pamphlet sent out by the Brighton & South Coast Railway Company, and telling how the popular watering-place may be reached by "Pullman Limited" in one hour from Victoria. The train leaves each Sunday at 11 A.M.; returning from Brighton at 9 P.M.; thus giving visitors a stay of nine hours at Brighton, and this in a luxurious train, and for a wonderfully low fare.

INDIAN FRUIT AND THE LONDON MARKET.—At last there seems a prospect of our suggestion, made in 1897-98, and since then consistently urged, nearing realisation. We gather that the London correspondent of the *Bombay Gazette*, writing on October 12, says:—"A conference between Mr. TATA and the Peninsula and Oriental Company on the question of establishing the export of Mangoes from Bombay on a commercial basis which, in the course of the summer, was mentioned as likely to be held this autumn, duly came off this week. There were present Sir THOMAS SUTHERLAND, Sir OWEN BURNE, and other Directors of the P. and O. Company, as well as Mr. TATA and Sir GEORGE BIRDWOOD. Nothing can be formally decided in the matter until it has been brought before a meeting of the Board, which will probably be held to-day, but I understand that the basis of the arrangement came to is, that Mr. TATA and those associated with him will guarantee a shipment of 500 tons of Mangoes and other merchantable Bombay fruits, the P. and O. Company during the next Mango season, say, April 25 to June 5, providing for one or two of their refrigerator steamers engaged in the Australian meat, butter, and fruit trade, calling on their homeward voyage at Bombay. Mr. TATA is now engaged in coming to an agreement with some of the London fruit-importers, but it is hoped he may be able to do better than that by establishing reciprocally advantageous relations with one of the great co-operative stores in the metropolis. It would probably be easy to dispose of 500 tons of good Mangoes in the West-end alone in a single

day at 1s. each. A few Mangoes sent to a Bond Street shop last summer were almost instantaneously sold off at 5s. each, and stringy, turpentine Madeira Mangoes now on sale in various London shops are selling at 1s. to 2s. apiece." We congratulate Mr. TATA on the step he has taken, which is certain to have far-reaching results in the near future. *Indian Gardening*.

DOYENNÉ DU COMICE.—The recent action of the Fruit Committee of the Royal Horticultural Society in certifying this Pear has led to some discussion. Some say it is ridiculous to certificate so old a Pear, of whose merits everyone is cognisant. Others think it is never too late to repair an omission, and that the list of certificated plants or fruits should be rendered as complete as possible, if only for the sake of those who pin their faith on the verdict of the Royal Horticultural Society. If we placed ourselves in the position of amateurs, or of those who have no knowledge of the merits of particular fruits, we should look on the omission of Doyenné du Comice, or even of Black Hamburg, from the list of the Royal Horticultural Society as an indication that for some reason or other those sorts were not suited for general cultivation.

LAUREL-CHERRIES.—Mr. SMITH, of the Daisy Hill Nurseries, Newry, sends us specimens of the following Laurel-Cherries, or as they are commonly, but erroneously, called Cherry-Laurels:—

Lauro-cerasus Schipkaensis, with leaves 5 inches long by 1½ in. broad, oblong-lanceolate, acute at both ends, tapering at the base into a short petiole about ½ in. long, slightly recurved at the margins.

Lauro-cerasus Schipkaensis Zabelianus, with narrow lanceolate leaves; otherwise similar to the preceding.

Lauro-cerasus Schipkaensis Mischianus, leaves 2½ by 1½ in., oblong obovate, slightly acute at the apex, tapering at the base into a stalk about ¼ in. long.

Mr. SMITH tells us that the habit of the two latter forms is quite different from that of the type, which is quite erect. Both the varieties are free-flowering, and produce blooms when quite small; whilst the type-form has not yet flowered at Newry, although it has been on the grounds two years longer than the others. We take the names as we find them, but there can be little doubt that they are all forms of *Prunus Lauro-cerasus* of Linnaeus.

MONSTROUS BEGONIAS.—We have already alluded to and figured tuberous Begonias in which the perianth segments were remarkable for the numerous fringe-like projections which protruded from their upper surface. But these crested Begonias are as nothing compared with the truly extraordinary specimens shown recently in Paris by Messrs. VILMORIN ANDRIEUX & Co., and Messrs. VALLERAND FRÈRES. According to the figures in the *Revue Horticole* of November 16, the perianth segments, the stamens, and the pistils of the female flowers are converted into forms resembling tufts of plumes, trumpets, and other shapes which almost defy description, and which seem as if they were the result of wild caprice. Of course, it is nothing of the sort, it is only our ignorance which leads us to think so.

MR. HARRISON WEIR requests us to state that he has removed from Sevenoaks, and that his address is now Poplar Hall, Appledore, Kent.

KEW SEED LIST.—The list of seeds of hardy plants collected at Kew during the year 1900 is now published by EYRE & SPOTTISWOODE, East Harding Street, Fleet Street. The seeds are not sold to the public, but are available for exchange with other gardens, and with special correspondents. The list occupies forty 8vo pages with double columns.

WILLIAM MACGILLIVRAY, SCIENTIST.—A fitting, if somewhat tardy, testimony has been raised in Marischal College, Aberdeen University,

to the memory of one of the most interesting and inspiring men who ever taught within its walls—Professor WILLIAM MACGILLIVRAY. Half a century has elapsed since he ased to teach, but his memory has been warmly cherished all these years, and his work and spirit have become one of the pleasant traditions of the University and city of Aberdeen. Professor MACGILLIVRAY was appointed to the chair of natural history in Marischal College in 1841, and died in 1852. Dr. JOHN FORBES WHITE, one of his old pupils, unveiled the tablet, and in doing so enumerated the many debts we owe to the hard work and untiring energy of MACGILLIVRAY. After descending on his work as a botanist and ornithologist, Dr. WHITE said MACGILLIVRAY was the first Professor to give a strictly scientific course of lectures on geology, a science which was then beginning to attract the attention of theologians. The *Vestiges of Creation* had appeared in the early forties, and clergymen attended MACGILLIVRAY's class in numbers to hear what science had to say in regard to the age and creation of the world. Professors came also, and enrolled themselves in his class. The bronze tablet is made by "The Guild of Handicrafts," of London, from the design of Mr. ASHBEE, whose work is well known. It is adorned with artistic representations of some of the flowers and animals which were the friends of the man whose memory is now honoured. The inscription reads: "In memory of WILLIAM MACGILLIVRAY, M.A., LL.D., born 1796, died 1852: Author of a History of British Birds and other standard works in Natural Science; Professor of Natural History and Lecturer on Botany in Marischal College and University from 1841 to 1852. Erected in 1900, together with a monument at his grave in New Calton Cemetery, Edinburgh, by his relatives and surviving students, who affectionately cherish his memory, and by others desirous of doing honour to his character as a man and to his eminence as a naturalist." Dr. JAMES W. H. TRAIL, the Professor of Botany in Aberdeen University, said the subjects taught by MACGILLIVRAY, testified to the respect and admiration he felt for him when he came to know more fully the width and accuracy of the great scientist's work. Dr. TRAIL concluded by saying that "MACGILLIVRAY held strong views as to the claims of natural science to a place in education, and to the need of freeing education from the incubus of what would 'smother the mind that if unrestrained would inhale with delight the pure air of heaven.' To him, Nature-study in schools would have brought delight, as the promise of a better state of education. I think that of MACGILLIVRAY, as of few men, can be said—'Blessed are the pure in heart, for they shall see God.'"

WHOLESALE SPRAYING.—Some months since the *Journal of the Board of Agriculture* showed how charlock could be destroyed wholesale. In Ontario spraying has become (in its season) an indispensable adjunct in fruit-growing; and in the present time of scarcity of Christmas provision in the shape of Currants, all through peronospora—when some of us get acquainted with the power latent in two-year-old Currants—spraying is to be put into more extended use in vast areas of Grecian vineyards. A communication to the Foreign Office from H.B.M. Consul at Patras states, that owing to the ravages of peronospora there will be a very large demand during the next six months for sulphate of copper, which, diluted in water with slaked lime, and then sprayed on the plants as soon as the budding commences, is, so far as at present known, the only preventive to the pest. It is roughly estimated that from 4,000 to 5,000 tons of the sulphate will be imported by Greece during the coming six months, as the local output is comparatively small; and we may note that it is important that the article supplied for the spraying of Vines should contain not less than 95 per cent. of crystallized sulphate of copper—a smaller percentage renders the sulphate inoperative against the peronospora. Our manufacturers entering the

Greek market should supply with the crystals some ready test for ascertaining the quality of the material, and so to assist in securing a market therefor.

CHRYSANTHEMUM SOCIETY OF AMERICA.—The scale of judging plants and blooms of Chrysanthemums, in its entirety, is as follows:—

Scale A.—Scale of points for bush plants and standards, single specimens, or any number up to six, in an exhibition where the class under consideration does not form the chief feature in the exhibition hall—

Equality of size and form of plant	40
Excellence of bloom	35
Foliage	25
Total	100

Scale B.—Scale of points for bush plants; exhibits of more than six, or for any number of specimen plants, in an exhibition where the class under consideration forms the chief feature in the exhibition hall—

Excellence of bloom	40
Equality of size and form of plant	35
Foliage	25
Total	100

Scale C.—Scale of points for plants grown to single stem and one bloom. A height of not over 3 feet is recommended for plants in this class, and pots not over 6 inches in diameter—

Excellence of bloom	40
Compact and sturdy growth	35
Foliage	25
Total	100

Scale D.—Scale of points for specimen blooms for commercial purposes—

Colour	25
Form	25
Fulness	15
Size	15
Stem and foliage	10
Substance	10
Total	100

Scale E.—Scale of points for specimen blooms for exhibition purposes—

Distinctiveness	25
Colour	15
Form	15
Size	15
Stem	10
Foliage	10
Fulness	10
Total	100

EDWIN LONSDALE, Secretary, Wyndmoor, near Philadelphia, Pa.

THE ARRANGEMENT OF DAHLIAS.—The number of the *Deutsche Gärtner Zeitung* for November 17, contains numerous illustrations showing what elegant groupings are possible with the Dahlia—the Cactus Dahlia, be it understood. Nothing could render show Dahlias elegant.

AGRICULTURE IN GRENADA.—A report has reached us concerning the second course of lectures on Agricultural Education delivered to teachers of the Government and aided schools of Grenada last August and September. It is universally admitted that "the prosperity of most of the British West Indies must depend on the proper application to the soil and its culture of scientific and practical agricultural knowledge; and that, as regards the rising generation, represented by the school children, imparting that knowledge must be dependent on the efforts of the teachers." In the address given at the close of the course of lectures (delivered by Mr. HOWARD), his Excellency, Sir ALFRED MOLONEY, impressed upon his audience not merely the importance of the scientific studies under consideration, but the value of general observation and reasoning. Said he:—"A person in whom I was interested was of a very inquisitive turn of mind, and once made inquiries as to what in Africa people caught birds with, and they said the juice of a particular tree. So my friend got the native name for it, and on a suitable opportunity went

into the primæval forest and found these trees for himself—the *Landolphia awariensis*, the Ibo of the Gold Coast, a rubber-yielding vine. He tapped some of them, and soon extracted a pound or two of rubber. It so happened that this vine had a very rich milk, and its exposure to the air on bleeding brought about ready coagulation. So he got this pound of rubber, secured botanical specimens of leaves, flowers, and fruit, and sent them to England, to the Royal Gardens, Kew. The result was interesting and profitable. It is what I call a botanical romance. The outcome of that little effort, the last time I got figures, represented £600,000 a year to the colonies of the Gold Coast and Lagos." It is, in fact, to the "inquisitiveness" of observing men that the greatest discoveries are due.

"WEST AUSTRALIAN YEAR-BOOK."—This is a most elaborate and exhaustive statistical account of the colony, its population, and products. The trade, it is stated, has increased during the last decade at an almost phenomenal rate. Ten acres are required to feed a sheep, but by improving the land, the number of acres is reduced to two. The average temperature in the North is 66°; the average rainfall, 28½ inches. These figures apply to the South-West division, the portion first colonised. In the Kimberley division the temperature is as much as 83°. The Eucla division is unoccupied, owing to lack of water. The Eastern division comprises the interior of West Australia and the Coolgardie gold-fields; average temperature, 63°; rain, 10 inches.

CULTIVATION OF TOBACCO IN VICTORIA.—We learn that Tobacco farmers in this colony are so thoroughly satisfied with the prices obtained by them for leaf shipped during the past twelve months to England (with a bonus of 3d. per pound added by the colonial government), that they are getting ready for a large increase in the acreage of the crop. Some 150 tons of leaf were sent home during the period noted, and this so relieved the local markets, that prices were more satisfactory than had been expected some time previously. It may not be inopportune to add here, that the *Lancet* is of opinion that Tobacco is of real help to men who are engaged for long hours in severe labours and with but little food. Used with moderation, this journal says, the "weed" is of a value second only to food itself. This is one of the lessons of the South African campaign.

NEW PUBLIC PARKS FOR ABERDEEN.—An important addition to the public parks of the city of Aberdeen has been the purchase of Westburn, which is contiguous to the Victoria Park, for the sum of £14,000, from the owner, Mr. CHALMERS. The property is admirably suited for a park, and its area half as large again as Victoria Park, being 12 acres, and the grounds are already laid out in a manner which calls for little alteration, and a large number of fine old trees exist. Another purchase made by the City Council is of land for a park for the Torry, the south-eastern quarter of Aberdeen. The ground, which is between 9 and 10 acres in extent, belongs to the Northern Lighthouse Commissioners, and is adjacent to the Girdleness Lighthouse. It is considered one of the best sites that could be procured for a park in the immediate neighbourhood.

CULTURAL EDUCATION IN WESTERN AUSTRALIA.—Mr. LINDLEY COWEN, Secretary of the Western Australian Department of Agriculture, has recently given his ideas as to what ought to be done in the matter of agricultural education in this Australian colony. Those active steps should now be taken in the matter, both in relation to practice and theory. The Education Department of the colony has taken the matter up, and the Agricultural Department has given its assistance. During the preceding twelve months several young men arrived at Perth from England, who desired training in agriculture and orchard work; but only partial success attended the efforts to comply with their request, many of them having now left the

country. Inducements to settling in the colony are claimed to be far superior to those offered by any other colony. A training farm, it is suggested, should be established by the Government, or that a certain number of farmers, active, educated, and up-to-date in their method of culture, should be subsidised to take in young fellows like those above noted, for two years. Personally, the Secretary is of opinion that a State farm is the better plan. He does not believe in colleges or professors, but does not see why a moderate-sized farm cannot be as well managed by his Department, and be made as well to serve this useful educational purpose as by an individual. The Department has all the experts necessary for the work, and the only addition necessary is a competent and practical manager. The proposed farm would certainly be of great service to the Agricultural Department in its experimental work.

NATIONAL ROSE SOCIETY.—We are requested by Messrs. H. HONEYWOOD D'ONIERAIN and EDWARD MAWLEY (Hon. Secs.), to inform our readers that the twenty-fourth annual general meeting of the National Rose Society will take place at the rooms of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Thursday, December 6, at 3.30 P.M.: to receive the report of the committee; to pass the accounts; to elect the committee and officers for the ensuing year; and for the transaction of other general business. A meeting of the committee will be held immediately after the annual general meeting, to elect the General Purposes committee for the ensuing year. The annual dinner of the Society will be held the same day and place, at 5.30 P.M. GEORGE GORDON, Esq., V.M.H., in the Chair. Morning dress. Members and their friends are earnestly invited to attend this pleasant annual gathering of rosarians.

PUBLICATIONS RECEIVED.—We have received the *Report on Agriculture for the year 1899 for New South Wales*, and learn from it that "despite seasons, which for the greater portion of the Colony were most unfavourable, the areas of cultivation of all classes of crops have been materially increased." The Chief Inspector of Agriculture deplores the wanton destruction of timber and shrubby vegetation throughout the Colony, especially in the western districts, as this will soon be bitterly regretted when extensive areas of country will be laid waste by unchecked sweeping winds, and become useless for cultivation.—*The Agricultural Gazette of New South Wales*, for October, contains an important article on Olive Culture, by W. J. Allen, that is well illustrated. The other contents of the Gazette are of the usual practical and appropriate nature.—*Journal of the Department of Agriculture of Western Australia*, October, 1900. This includes many short articles and items of agricultural interest, some of them collected from "exchanges." The publication should prove valuable to growers and breeders throughout the Colony.

PLANT PORTRAITS.

- ASTER CONCOLOR, LINNÆUS. *Mechans' Monthly*, November.
 ECHINOCACTUS ANTI-SFIZII, Schumann. *Blühende Kakteen*, tab. 4. The descriptive text is labelled tab. 3.
 ECHINOOPSIS CINNABARINA, Labouret. *Blühende Kakteen*, tab. 2.
 ECHINOCACTUS MICROSPERMUS, Weber. *Blühende Kakteen*, tab. 1.
 ECHINOCACTUS SUB-INERMIS, Salm-Dyck. *Blühende Kakteen*, tab. 3 (in text as tab. 4).
 HAMAMELIS JAPONICA, Siebold & Zuccarini, Wittmack, in *Garten Flora*, 1900, tab. 1481.
 VANDA CERULESCENS RECHNERI. *Revue Horticole*, Nov. 16. Colour deeper blue than in the type.

PADDOCKHURST, WORTH, SUSSEX.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE seat of Sir Weetman Pearson, Bart., M.P., and Lady Pearson, is delightfully situated in the Sussex hills, about midway between London and Brighton, between the north and the south downs, overlooking a very beautiful and extensive stretch of country, including part of the Weald with its wooded heights and graceful rolling downs in the distance. The mansion has recently been enlarged, and is surrounded by extensive well kept gardens, which have been rearranged in the last few years under the direction of Mr. H. E. Milner [as was stated in our description of the then

uncompleted work in our issue for April 17, 1897. Ed.] When I visited the place last August, I was kindly allowed to make a few notes of the gardens, the publication of which may be of interest to some of the readers of this journal.

A splendid conservatory 86 feet in length, 35 feet in width, and 30 feet in height, and connected with the mansion, was filled with large Tree Ferns, Palms, Bamboos, &c., the floor of mosaic work, and the beds edged with white marble.

The other glass-houses consist of a range of span-roofed plant-houses 109 feet in length, 12 feet in width, and 10 feet in height, with a stage on two sides, and constructed in four divisions. In these compartments are cultivated Carnations, small Codiaums for table decoration, Pelargoniums, Begonia Gloire de Lorraine, &c. The Orchid-houses form a range of span-roofed houses 109 feet in length, 12 feet in width, and 10 feet in height, with a stage at each side of tier above tier, and provided with moisture-holding material. This range is in four divisions, which are filled with Cattleyas, Oncidiums, Odontoglossum citrosimum, Cattleya citrina, Calanthes, Dendrobiums, Phalenopsis Sanderi (of which a fine lot in flower), Cœlogynas, Cypripediums, and Odontoglossums. Hanging from the roof, a basket of Stanhopea oculata with thirteen large flower-spikes was noted, the perfume of which filled the house. Two span-roof ranges 109 feet long, and 12 feet wide, are devoted to Melons, Pineapples, Cucumbers, propagating purposes, and Tomatos. All of these houses are fitted with shelves for forcing Strawberries, Royal Sovereign being the variety grown to the number of 2,000. The runners for this purpose are planted out in borders in the autumn, and good results are obtained.

An orchard-house measures 116 feet in length, 24 feet in width, and 12 feet in height, formed with hipped roof, and contains Peaches, Nectarines, Pears, Plums, and Cherries in pots. In the autumn these trees are plunged outside, and their places taken by Chrysanthemums, about 1,000 of which are cultivated. Along the front of these ranges run heated pits used for bedding out plants, &c.

Another range consists of Palm and Banana stoves. They are 30 feet long, 20 feet wide, and 24 feet elevation. Palms are in great request for house decorating in the London season. The Bananas were eight in number, and some were carrying fine bunches of fruit, the species being Musa Cavendishi. A Rose-house in the centre of the range is 40 feet long, 20 feet wide, 30 feet in height; and on each side is a greenhouse 27 feet long, 17 feet wide, 14 feet high, and a plant stove of the same dimensions, in which plants of Allamanda in varieties grown in baskets predominate. They are also planted out against walls, and grown in pots. Anthuriums are largely grown here for cutting purposes, and behind the stove is a very useful fernery where quantities of Lygodiums and other Ferns, Smilax, and several varieties of Asparagus, are grown for decoration.

On each side of these houses are three span vineries, each 83 feet long, 17 feet wide, 14 feet high. In the early vineries the fruit had been consumed, and the late Vines were finishing fine crops of fruit. These consisted of Muscat of Alexandria, Lady Downes Seedling, Black Alicante, and others. The Vines recently planted were strong and vigorous, and should give good returns as they get older. These ranges are heated by three Trentham boilers laid side by side in one stokehole. Mr. Arthur Wadds, the head gardener, informed me that these boilers gave entire satisfaction. Behind this range there are rooms for nine young gardeners, potting-sheds, gardener's office, boiler and Mushroom-houses, the whole being well constructed, lighted by electricity, and furnished with an abundant supply of good water.

The glass-houses, except such part of them as was done by the estate mechanics, were built by Messrs. Mackenzie & Moncur, and the whole of the woodwork is of teak.

THE FLOWER GARDEN

in the front of the mansion is unique: it is planted with Tulips in the autumn, and with Violas and Pelargoniums in the summer; as also is the Rose garden, where there is a large and good collection of Roses. There are besides several good borders for the cultivation of herbaceous perennial plants, in which a good selection is already planted. Rhododendrons and Ghent Azaleas are planted in bold masses, whence they are favourably placed for being viewed when in flower. There are also several striking beds of large size, which are filled with flowering-plants in the mixed style, viz., Abutilons, Fuchsias, Heliotropes, &c., and dwarfier plants beneath them as a ground-work. One conspicuous bed of red, white, and blue, was formed of Salvia patens, white Queen Pelargonium, and Tom Thumb Nasturtium. Gladiolus, and Liliums lancifolium rubrum and album, were planted in the beds of Ghent Azaleas, the plants of the latter being of a height to permit the flowers to show above them.

About 200 yards distant from the house in a very suitable situation for the purpose, a lake and rockery have been constructed, very pretty in design as shown. The rockery is planted with select Alpines and other plants; and the water is furnished with Nymphæas, and other water plants.

A broad drive separates the kitchen garden from the flower-garden, and down each side are inserted large iron arches covered with Pyrus Malus floribunda, which must form a beautiful sight when the plants are in flower. The kitchen garden, which is of considerable extent, and slopes gradually to the south, consists of a fertile loam well adapted to the cultivation of fruit and vegetables. Pyramidal Apples, Pears, Plums, and Cherries, have been planted by the sides of the walks. A wall about 300 yards in length shelters the garden on the north-east side, and is wired throughout, and planted with trees of the Apricot, Pear, Plum, Peach, and Nectarine, which were carrying crops of fine fruit. A large orchard has likewise been planted with standard fruit-trees, which will in time afford satisfactory crops. One of the attractions of the place is a maze formed of Yew, which occupies a situation near the flower-garden and mansion. Visitor.

FRUIT REGISTER.

MAY DUKE GOOSEBERRY.

THIS is from ten to fourteen days earlier than "Bobs," "Lads," "Keepsake," or "Whinham's Industry." It is a clear pea-green in colour, without any of the mealy appearance which interferes with the sale of "Whinham's." The berry is of the largest size and of handsome appearance. The bush is large, of slightly pendulous habit, should be planted 5 or 6 feet apart each way; it is a good cropper. Mr. Pyne, of the Denver Nurseries, Topsham, informs us that this variety is the earliest and most profitable in Devonshire, where it is largely grown, and enables the Devonshire growers to put their fruit on the market some days earlier than the Kent growers.

THE RED CURRANT AS A CORDON.

The main supply of Red Currants is best obtained from bushes; but plants trained as cordons, either horizontal or perpendicular, afford well flavoured fruit in abundance. Moreover, the season can be very much extended, and the fruit will be nearly as well flavoured by planting the Currant against a wall having a northern, as an east or west aspect. If the staple is light, stiff loam should be mixed with it in planting, or in preparing the station for the plants, as well as some decayed manure. When planting single cordons, a space of 10 inches will suffice, whilst for plants having two or more leading shoots, a proportionate distance may be allowed. If a wall is utilised for their culture, I am in favour of fitting it with wires from top to

bottom at 6 to 8 inches apart. The wires should be secured to the wall with cast-iron studs. The main shoots or branches will be well furnished with fruit-spurs by a regular course of summer shortening of the current season's shoots to half their length in July, and winter pruning to a few eyes. If doubled netting be spread over the wall cordon as soon as the fruit commences to colour, ripening will be retarded, and birds kept from it. *H. T. Martin, Stoneleigh.*

THE WEATHER IN WEST HERTS.

A WARM week. On three days the highest shade temperature exceeded 50°, and on one night the thermometer exposed on the lawn did not fall lower than 37°. At no time did this thermometer show more than 8° of frost. Owing to the paucity of sunshine in the early part of the week, the earth temperatures, both at 1 foot and 2 feet deep, are at the present time only about 1° higher than is seasonable. Some rain fell on four days, but only on the 24th (when about half an inch was deposited) was the amount worth mentioning. Since percolation first began, about ten days ago, nearly 3 gallons of water have come through the gauge covered with short grass, so that the ground may now be regarded as having become moist to the depth of several feet. The last two days have been bright for the time of year, but previous to this there was but a very scanty record of sunshine. *E. M., Berkhamsted, November 27.*

CONTINENTAL NOVELTIES.

MR. ERNST BENARY offers seeds of *Aquilegia chrysantha*, double-flowered variety; *Gaillardia grandiflora*, with golden variegated leaves; *Gloxinia Brilliant*; *Papaver alpinum*, with lacinate petals; *Petunia rosea perfecta*; single Poppy Miss Sherwood, flowers satiny-white; Shirley Poppy, dwarf varieties; *Pyrethrum roseum grandiflorum*; *Tropæolum Lobbianum* "Lilliput"; *Verbena ericoides alba*; Asters, dwarf Princess, dwarf Victoria, Midsummer Triumph, and King Humbert.

Mr. C. HEINEMANN, Erfurt, offers seeds of Niggerhead Pickling Cabbage; *Begonia Crown Prince*; *Chrysanthemum maximum Princess Henry*; *Dianthus Heddeewigi nobilis*; *Myosotis alpestris*, "Fair Maiden."

CRATEGUS PYRACANTHA.

As a subject which can be subordinated to serve as a table decoration, the berries of this plant are not to be despised. One mode of utilising them is to trace a design with *Myrsiphyllum asparagoides* on the cloth, and also about the lamps, and employ small bunches of *C. pyracantha* at intervals amongst it. Another evening the *pyracantha* thorn may be made use of in conjunction with Heather in bloom, which form charming effects, and quite appropriate to the season of sport.

The streamers of *Ampelopsis Veitchi* when the leaf is changing colour, in combination with *pyracantha* berries, make a pleasing change in the decoration of the dinner-table in the autumn. There are other modes of making a pretty display on the dinner-table with the berries of this plant, but those I have given will suffice to indicate enough.

A loamy soil mixed with lime rubbish, and small quantity of manure, will grow the plant well; but in buying, it is advisable to procure strong plants. There are several methods of treating the plants, some persons attach the shoots to the wall like a Peach-tree, and prune with the knife once or twice a year, and spur back hard; others attach the main shoots with wire or iron staples to the wall, and let the plant then grow pretty much as it will, merely thinning out the shoots where these are much crowded; others again keep the plant in order with the shears—the most inartistic mode. Grown as a pyramid this

thorn has a pleasing feature amongst other shrubs; and as a standard it is effective. Like other exotic plants that thrive in our climate, it pays to give it manure-water at the root and a mulch in the season of growth. *H. T. Martin.*

THE SAXIFRAGES OF THE PYRENEES.

THE Pyrenees would seem to be the centre of dispersion for the genus *Saxifraga*, so many species being found there and nowhere else. Formerly united to the Maritime Alps, this chain of mountains has preserved the types similar to those

and with these are found the *Saxifrages* of the Sierras of Spain, where the *Dactyloides* group predominates.

Dr. Engler, in his *Monographie des Gattung Saxifraga*, in the geographical chart showing the distribution of the species, marks with the deepest colouring (in indication of the largest proportion of *Saxifrages* found among the flora) the Pyrenees, the southern and western Alps, and the Himalayas.

The *Dactyloides* group, including low-growing tufted species, is most richly represented in the Pyrenean flora. These plants have slender stems, spreading over the soil, forming large patches of

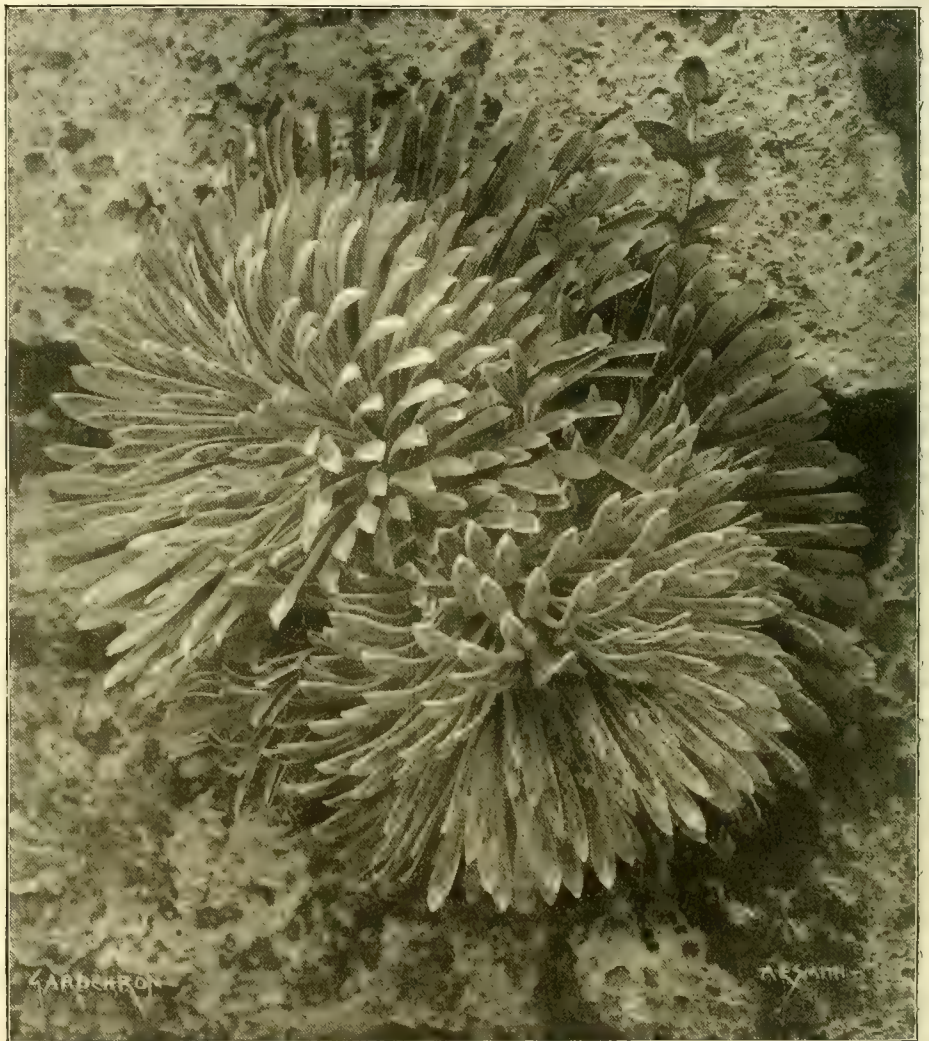


FIG. 122.—SAXIFRAGA LONGIFOLIA.

found in the Ligurian, and in the south-western Alps. These latter mountains also contain a good many types of *Saxifrage* peculiar to themselves, as, for example, *S. florulenta*, *lantoscana*, *cochlearis*, and *lingulata*, now found in the southern Apennines, and *S. valdensis*. The Pyrenees themselves include forty-five species of *Saxifrage*, fifteen of these are those peculiar to this district alone. There are five species of the *Dactyloides* group common to the Pyrenees, and to the Spanish Sierras; three of the *Robertsonia* group common to the Pyrenees, Spain, and Ireland; one species (of the *Kabtschia* group) found in the Pyrenees and the Abruzzi, this is *S. media*; and there are many species of different groups found in the Pyrenees, Cevennes, and the mountains of Spain.

In the Pyrenees, then, it seems that the *Saxifrages* of the Maritime Alps are met with,

mossy finely-cut verdure, with myriads of white flowers, often spotted with bright rose. The best known and most widely dispersed species in our gardens are *geranioides*, *ladanifera*, *obscura*, *pentadactylis*, *mixta*, *caespitosa*, *exarata*, and *hypnoides*. Rarely are seen the true *S. aquatica*, *ajugifolia*, and *capitata*, which require careful cultivation. We have succeeded with them at the Linnæa, but only with much difficulty in Geneva, where the air does not suit them. They require a well-drained pebbly soil, free from lime, so far as we can tell, and porous. *S. aquatica* is found on the edges of water-courses, and in the chinks of damp rocks. The very long fleshy roots penetrate deeply into a porous and damp soil.

But the most beautiful species of the genus, and of all Pyrenean plants, is the curious *S. longifolia*. This covers all the slopes of the limestone rocks

with its glaucous even rosettes that brighten the stones with flowers and foliage. In July and August the steep slopes are whitened with the snowy carpet, and from the centre of the oldest rosettes rises the pyramidal flower-stem covered with blooms. After flowering the plant dies, but is perpetuated by the multitudes of seeds which become transported over all obstacles, and germinate in inaccessible spots.

This plant has been long in cultivation. It germinates easily, but the growth is so slow that the plants only flower after ten or twelve years. It is also difficult to keep the species pure in gardens, as it crosses readily, so flowering clumps must be isolated if seed is to be saved. The clefts of the rocks in the garden of the *Linnaea* include many intermediate forms among the species and varieties which we cultivate, and which hybridise

HOME CORRESPONDENCE.

RESERVE TREES OF THE PEACH AND NECTARINE.—It is a strong point with me, as with doubtless many gardeners, to have a reserve of strong, healthy, young fruit-trees of all kinds, and of the best varieties. These need not be put, whilst growing into useful sizes, into the best places on the walls, as almost any warm aspect will answer the purpose. Before buying these trees from the nurseryman, the purpose for which they are intended ought to receive a thought. If for growing in forcing-houses, trees with stems of suitable height must be selected, and the varieties must be such as will maintain a long succession of fruit. The American varieties of Peaches do not find favour for very early forcing with many gardeners, owing to a great loss of bud when forcing begins. For forcing to begin in early February, and fruit

at various depths and directions, and water in moderate quantity thrown over the soil in order to settle it about the roots, the water being omitted if the soil is fairly moist. If the soil be of a sandy nature, a slight mulch may be applied as far as the roots extend. *H. Markham, Wrotham Park.*

THE GREEN DALE OAK.—The correspondence about Oaks which has recently appeared in your journal has been of such an interesting nature, that it has led me to send you a brief account of, perhaps, one of the most renowned of old-world trees now in existence. This "Methuselah of trees," named "The Green Dale Oak," stands in a beautiful grassy dell, near to Welbeck Abbey, and the once famous Forest of Sherwood, celebrated from its connection with the bold forester, Robin Hood. The age of this veteran dates back to 1600. In 1724 an opening was cut through the bole sufficiently large for a carriage and four to be driven through it. Doubtless this mutilation had a disastrous effect on the constitution of the tree, for in the accompanying sketch (which is a copy of the original which I made thirty years ago, when in the gardens at Welbeck under Mr. William Tillery, then head gardener), you will see that life was then only left sufficient to support the head of this old relic of the forest. The height of the arch cut through when the sketch was made was 10 feet, with a width of 6 feet. Part of the tree has since, I believe, been supported by props. Standing in the gothic hall at Welbeck Abbey, there is a cabinet about 10 feet in height, which was made from the heart of the tree when the passage was cut through. Covering the cabinet are beautiful and quaint representations of this old relic, with coach and horses driving through the aperture. It is now so long ago, that although I saw the cabinet almost daily, I cannot recollect all the words except "To ye Oke," and dated 1727, also inscribed. These I have copied from a note-book used by me at that time. Some distance away there is an Oak wood of some acres in extent of sturdy trees, every one of these being raised from acorns of the old monarch; but what is peculiar is that the foliage of these trees (now old trees themselves) appear to differ considerably from that of their ancestor. The acorns are also larger, and more obtuse or round in shape. I might state that the timber in the trees of the plantation is more straight and not so branching as in the old parent tree. *James E. Whiting, 41, Heath Street, Hampstead, N. W.*



FIG. 123.—*SAXIFRAGA LONGIFOLIA* IN THE JARDIN ALPIN D'ACCLIMATATION, GENEVA.

(SEE P. 402.)

naturally. The seed gathered on the mountains cannot be used because of this variability.

We have devoted to this one species of Saxifrage a tufa wall that forms the outer boundary of a Fern-house; and we carefully watch the flowering to be sure that the seed taken from these plants is pure. This year we had nine plants of *S. longifolia* in bloom at once; one produced about three thousand six hundred flowers on the same truss, and was noticed by our local papers, and photographed several times. These plants, which attained a maximum diameter, have been in our wall for seven years without flowering, and then all bloomed at the same time.

Other Pyrenean Saxifrages most useful in cultivation are *S. aretioides*, with glaucous foliage and greenish-yellow flowers, that are curiously effective among the rocks; and *luteo-purpurea*, which is a hybrid between *S. aretioides* and *S. media*. They are easily cultivated in the chinks of the rocks in full sunshine. *H. Correvon, Jardin Alpin d'Acclimatation, Geneva.*

to ripen towards the middle of the month of May without hard forcing, I would recommend Waterloo, Early York, Dymond, Royal George, Bellegarde, and the Nectarine Peach; probably equal to the above are Alexander, Hale's Early, Violette Hative, Stirling Castle, Crimson Galande, and Princess of Wales. Of Nectarines, Early Rivers, Lord Napier, Pine-apple, and Humboldt. There is no greater mistake than to over-crop forced trees, and a regular and middle crop of large fruits of good quality is by far the better policy for the gardener. Young trees planted and trained for replacing any that fail in the forcing-houses or in the open, require to be grown for three or four years on the outside walls. Such trees are of fair size, and bear fruit freely the first season after being transferred to a house or to a fruit-wall. The present is a most suitable season to replant the Peach and Nectarine, and any sites which may have been prepared should be planted up. In transplanting, plenty of good loam, old mortar, and charred earth will be required; and having heaps of this in handy places, let the trees be carefully dug up. The roots, after being trimmed at the tips, should be planted in firm soil

DIAMOND JUBILEE GRAPE.—With a view to throwing some light on to the controversy now going on in the columns of the *Gardeners' Chronicle*, I purpose sending to the Drill Hall, London, on Tuesday next, December 4, a fair sample medium-sized bunch of the true Black Morocco, with wood, foliage, &c. It may be mentioned that Black Morocco was one of the parents of the well-known Madresfield Court Black Muscat, to which there is a great resemblance in the shape and contour of the berry; the other parent being Muscat of Alexandria. There is some little care required at setting-time, the Black Morocco Grape being one of those varieties which hold peculiar globules of moisture on the stigma of the flower. If these globules are removed by hand early in the day, and the customary tapping of rods later on, to disperse the pollen be carried out, under a brisk temperature in a well-ventilated vinery, the setting of the flowers is effected readily. Black Morocco forms a good succession to Madresfield Court Grape, and not a few fall into the error that it is Madresfield kept well, so good is the quality when well-ripened, and kept hanging afterwards. *William Crump, Madresfield Court.*

— The time for determining the identity and merits (if any) of the Diamond Jubilee Grape is evidently not just yet, when we have the Secretary of the Royal Horticultural Society very fairly writing to all concerned that the Society will only be bound by the exact wording of the official proceedings. The Rev. W. Wilks makes ingenious comparisons between the Apple Blenheim Orange and the Black Morocco Grape. Perhaps you will allow me to repeat a sentence or two, to make the meaning clear, and prevent the possibility of mistake: "The Committee carefully refrained from expressing any opinion for or against the identity of Diamond Jubilee and Black Morocco; they contented themselves with all that concerned them, namely, a statement of their very great similarity. For example, it is very well known to all fruit-growers that there are scattered up and down the country a large

number of Apples which have been raised from pips of Blenheim Orange. They are, some of them excellent Apples, but far too like (and not superior to) their parent to deserve a distinctive award; but no prudent person would ever dream of asserting that they were absolutely identical with it, though they are, some of them, so like it, and are so constantly mistaken for it as to be practically indistinguishable from it." Prettily conceived and prettily expressed, and yet there is little parallel between the Grape and the Apple. The old popular Apple, through windfalls, is sowing the gardens and orchards with seeds year by year; but the Grape is off the seed line in Nature, and most of the older cultivators have known more or less of the Black Morocco, which has several synonyms. I never knew a grower to sow Black Morocco, Black Muscatel, Red Muscatel, Alicante, Horsforth Seedling, or Mogul. A distinct variety was received some years since by the Royal Horticultural Society—"Morocco Prince," said to be a cross between "Black Morocco" and "Black Prince," the new Vine being rather better, but with most of the pure Morocco qualities in common. Though I have seen and handled the "Black Morocco" Grape many times, I have never seen a viney full of it, nor known a brisk demand for it for market or commercial purposes. It has always been a difficult Grape to set its berries regularly, and perhaps no Vine has had more combing into submissiveness, into regular sets, with a dry hand skilfully used when the Vines are blooming. The berries are also apt to be irregular in form, size, and colour. Through its long life it has been known as one of the most difficult Grapes to furnish a regular crop of bunches. The skin is thick, reddish-brown, becoming black when fully ripe, beginning to colour at the apex, and proceeding gradually towards the stalk, where it is generally paler. The flesh may be described as firm, coarse, and crisp, and at last sweet when finished in a high temperature. The small berries are mostly without seeds, the large generally with one. The two duplicate seedlings so-called were not such, but Vines specially well grown and cultivated, the first by Mr. Appleby, gardener at Horwath Hall, near Leeds; and the second (Kempsey Alicante) by Mr. Cox, gardener at Kempsey House, Worcester. The Morocco Prince is, as already stated, improved by the cross; the leaves die off of a purple tint, and the berries set well. The Vine is, however, a poor bearer, though the flavour is vinous, and flesh firm and crackling. With a threatened resurrection of the old "Black Morocco," or something that seems indistinguishable from it, these few particulars may prove of special use and interest at the moment. They may be read with greater avidity, as many who crowded the Waverley Market, on November 15, 16, and 17, at the great feast of Chrysanthemums, to study the new Vine and Grape "Diamond Jubilee," found it for some reason conspicuous by its absence, *Caledonicus*.

THE CHRYSANTHEMUM RUST.—There is, unfortunately, but little doubt that this fell disease has spread considerably during the past season. In many gardens from which it has been absent up to the present year its ravages are now only too apparent. I have noticed that in numerous cases at Chrysanthemum shows plants in groups and in nurserymen's exhibits were seriously affected. This, I think, shows a sad want of consideration, since plants from gardens hitherto exempt from the disease, can scarcely fail to contract it from proximity to others whose leaves are covered with bursting spores. Although it is generally accepted that the disease is spread by infection, cases occur in which it has appeared where the possibility of infection seemed so remote as to render it well nigh incredible, thus lending colour to the opinion expressed by certain Chrysanthemum growers that the disease is generated spontaneously [?]. One instance of this will suffice. In a certain deep south Devon valley that I am acquainted with, several thousands of Chrysanthemums are grown. As soon as the rust appeared in the neighbourhood, and the virulence of its attacks had been demonstrated, it was determined by those in authority that no fresh stock should be admitted, and that propagation should be effected from home-grown plants alone. Until the present season no trace of the disease was found, but in the month of August it was discovered that a batch of the old variety *Flora*, which had for years been grown exclusively in the open air and never afforded glass protection, and thus would be naturally presupposed to be of

the hardest constitution, had contracted the rust. The so-called single-flowered variety, Admiral Sir Thomas Symons, next became infected, and the disease was not long in establishing itself on many other varieties. Some, however, notably Mary Anderson, which was growing in the midst of affected plants, appeared immune. In the case here alluded to, the nearest collection of Chrysanthemums was distant over a quarter of a mile, a high and wooded hill, that might reasonably be expected to provide an effectual barrier to the passage of spores, intervening between the two spots. It is, I believe, generally assumed that the more highly nurtured varieties are most prone to attacks of the rust; Modesto, Mrs. Weeks, and Australie, being cited in proof of this contention. In the present instance, however, the presumably hardest variety of the large number cultivated was the first to contract the disease. Although many nostrums have been advocated as preventives and cures, I am not aware that any have proved uniformly effectual as prophylactics or eradicators. In conversations with large exhibitors, I have been informed that numerous mixtures had been assiduously used without effect, and that even the daily sponging of the affected leaves with fungicide appeared to scarcely retard the spread of the disease. *S. W. F.*

LÆLIA DIGBYANA AS SEED PARENT.—In last week's *Gardeners' Chronicle*, in "Orchid Notes and Cleanings," mention is made of seedlings of *Lælia Digbyana* (seed parent) × *Cattleya Warscewiczii* Sanderiana in the collection of E. Ashworth, Esq.,



FIG. 124.—*BULIMUS GOODALLI*.

Wilmslow, which are now as "green, spherical bodies." This is mentioned under the assumption that it is an unique instance of success with *Lælia Digbyana* as seed bearer. Such is not the case. At Mr. Thwaites' suggestion, and after so many recorded failures, with little hope of success, I fertilised two flowers of *Lælia Digbyana* last year—one in July with pollen of *Cattleya Warscewiczii*, and one in August with *Cattleya aurea*. Both crosses were successful, and the capsules duly ripened, in each case taking just one year in the process. On examination, there were clearly two kinds of seed in each capsule; the seed next the column had a brownish tinge, and was sound, as it proved when sown; while that next the flower-stalk was white and fluffy, and did not germinate. About one-third of the seed in each capsule had the power of germinating. The hypothesis is, that owing to the abnormal distance between the stigma and the ovary in *Lælia Digbyana*, the pollen tubes become exhausted in the conducting tissue, coming into contact with and fertilising those ovules only which are near the entrance into the ovary. The sound seed germinated freely in both cases, and, with reductions incidental to transplanting and insect *gourmandise*, we are now left with a considerable number of each cross, the largest plants of which are making their third leaf, and sending out roots, and we are assured of carrying them over the dead season. An abiding obstacle to the easy raising of *Lælia Digbyana* hybrids, even when it is used as the pollen-parent, is the ripening of the seed near the end of the growing season. *J. M. Black, The Gardens, Christchurch Road, Streatham.*

CAMELLIAS IN FRUIT.—I enclose a few fruits of Camellias from the open; the fruits of the striped variety, "Contessa Lavinia Maggi," produce fruits similarly striped; and a semi-double red-flowered variety (I do not know its name) bears fruits which are what I may call a "self

colour" on the sunny side. Unfortunately, the single and semi-double varieties have not fruited since I have been here. I do not know whether this peculiarity of Contessa Lavinia Maggi is well known, but I have not previously seen or heard of it; and thinking it may possibly be of interest, I send it. Despite the fact that the summer of last year was hotter than the past summer, these two Camellias have fruited much more freely this autumn. *A. C. Bartlett, Pencarrow, Cornwall.* [Figures of Camellia fruits, ripened in the open air in Dorset, were given in our volumes for 1873 and 1884. The stripes on the capsule of the variety, with striped petals, are very curious. Ed.]

BULIMUS GOODALLI.

THE annexed figures show a species of snail, specimens of which were kindly sent for our inspection by a correspondent residing in Shropshire, who found them in some pots of Amazon Lilies, which had not been reported for several years. This species was figured in the *Gardeners' Chronicle*, March 8, 1873, from specimens found in Mr. G. F. Wilson's Cucumber-house. It had also been found in a garden in Suffolk. It is injurious to vegetation, and should be sought for towards evening, and exterminated. The intruder is believed to have been introduced from the West Indies. The smaller figures in our sketch represent the shells of the younger creatures; the larger ones are about twice the natural size (fig. 124).

LAW NOTES.

THE ALLEGED SMOKE NUISANCE AT HEATON MERSEY.

At the Manchester Chancery Court, on Monday, November 19, Vice-Chancellor Hall gave judgment in the action brought by Mr. John Leeman, of West Bank, Heaton Mersey, against Henry Lovatt and Robert Stuart, claiming an injunction to restrain the defendants from allowing smoke to escape from engines employed upon certain works at Heaton Mersey in such volumes as to cause nuisance or annoyance to the plaintiff at his residence, and to damage the shrubs and plants in his gardens and greenhouses.

The Vice-Chancellor said the plaintiff had gardens occupying 13½ acres in extent, and in planting and laying them out he had spent £4,000 or £5,000. He had an Orchard-house where there was a very large stock of Orchids, said to be very valuable, and he had also vineries. Mr. Lovatt was the contractor for a short railway line intended to run into the Manchester and South District line, at a distance of about 170 yards from the southerly boundary of the plaintiff's premises, and Mr. Stuart was the engineer employed by him who was responsible for the construction of the works. Their operations began some time about November last year, and the main work seemed to have been the construction of an embankment for the purpose of running the line over the line of the Cheshire Lines Committee, and over the Mersey. For that purpose it was necessary to bring soil from some distance by means of an engine and trucks. Soon after the commencement of the works the plaintiff made some complaint, but there was no really serious complaint until April and May. His solicitors then communicated with the defendants, but no improvement took place, and a writ was issued. An injunction was obtained, and after that the nuisance ceased, and there was no longer any ground for complaint against the defendants. The action having now come on for trial, the question was whether substantial damage would have been caused if the state of things existing at the commencement of the action had been allowed to continue. It would not be sufficient that it should be a mere casual or temporary nuisance, because everybody must put up with a certain amount of annoyance arising

from works, or otherwise business could not proceed; but the law was quite clear that no person could be allowed to inflict substantial damage upon another by means of emitting smoke or anything else which constituted a serious nuisance. He doubted whether he ought to try the case on the ground of damage to an excessively delicate plant like an Orchid, but he proposed to decide it simply as if it was a question of an ordinary garden. He thought it was clear that in April and in the first week of May smoke was issuing from the defendant's engines in such quantities as substantially to interfere with the comfort of persons in the plaintiff's garden, and there was evidence that if continued it would have substantially injured his property, although the injunction having been granted and the nuisance stopped, the garden had now recovered itself, and there was no fatal injury done to any of the shrubs. He thought that the plaintiff was quite justified in coming to the court, because a man suffering from a nuisance of that kind was not bound to wait until irreparable injury was done before making an application to the court. The evidence showed that the nuisance did not arise from any defect in the engines themselves, nor to the coal used, which was neither a common coal nor the best Welsh steam coal, but an intermediate coal—a hard steam coal from Nottingham—and therefore it was probably due to the negligence of the defendant's servants. After examining the evidence that had been given, he thought the only way to reconcile it was that the defendant's servants, who were left in charge of the engines, had visited a public-house said to be five minutes away, and to save themselves trouble had thrown coal upon the fire and shut it down so as to prevent it burning away quickly, and the result was that smoke was emitted. The plaintiff had made out his case and succeeded, but as the nuisance had now been stopped, it was not necessary to put the defendants under the penalty of an injunction. There would be a declaration that the plaintiff was entitled to bring the action, and was entitled to an injunction. There would be liberty to apply for the injunction, and the defendants must pay the costs of the action.

A DISPUTE ABOUT PRIZE MONEY.

At the Chesterfield County Court, on Friday, November 23, His Honour Judge Smyly, Q.C., dealt with a case of considerable interest to exhibitors at horticultural shows. An action was brought by William Rigley, an exhibitor at the last show of the Dronfield Agricultural and Horticultural Society, and a member of the committee of the Society, to recover from the Society the sum of £2 3s., being the amount of prize-money awarded him at the show on September 30 for his exhibits. Mr. C. Padley appeared for the Society, and the plaintiff conducted his own case.

Mr. Padley admitted on behalf of the Society that plaintiff won prizes to the amount claimed, but the Society contended that his conduct disqualified him from receiving the money.

The plaintiff, in the course of his cross examination, said the *Asters*, *Apples*, *Marigolds*, in respect of which he won prizes, were his own growing.

A copy of the Society's rules was put in, one of which was to the effect that the exhibits must be grown by the exhibitor, and any member not complying with the rule was liable to disqualification, expulsion from the Society, and prosecution.

Mr. Padley said plaintiff was a member of the committee when the rule was drawn up. But he exhibited fruits and flowers which, on his own admission before the whole committee, he had not grown.

Plaintiff argued that when he signed the entry-form, he did not bind himself to abide by that rule.

His Honour: Even if there were no rules at all, surely common honesty would not allow you to show things that you had not grown yourself. That simply means that any person with a few shillings, but no garden, could buy specimens and

sweep off the prizes. Such a thing would not be right and proper. You cannot for a moment claim those prizes in the face of the fact that you—a member of the committee, too, of all persons—showed things that were not grown by you.

The plaintiff said he had been cheated.

His Honour: It would be nearer the truth to say you have tried to cheat.—A verdict for the defendant Society was given. *Yorkshire Courier*, November 24, 1900.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 20.—*President*: A. D. Michael, Esq., in the Chair; and Messrs. Vetch, Wicks (Rev.), A. Sutton, J. Hudson, and Dr. Masters.

Oak-leaves.—Rev. W. Wicks showed additional specimens illustrating the great diversity in the lobing of the leaves. One specimen was pectinate, like the frond of a *Blechnum*.

Dimorphic Orchid.—Mr. HERRIN J. VITCH showed a spike bearing flowers like those of *Odontoglossum crispum* above, and blooms of *O. Wilckeanum* beneath. The specimen came from Mrs. BRIGGS-BURN, Bank House, Accrington. The inference is that the twofold character may be due to the dissociation of hybrid characters. The plant was referred by Mr. ROBERT to *Odontoglossum Denisonae*.

Diseased Peas from Broughty Ferry.—Dr. WILLIAM SMITH reported that "the specimens sent were attacked by the Pea-mildew, which showed as a white mould on all parts; later, after the material dried up, numerous black winter-fruits of the *Erysiphe* group of fungi confirmed the earlier observations. The species is probably *Erysiphe Martii*, Lev., although an almost similar species is also said to attack Peas. In the summer of 1899 I found the same disease, accompanied by the same fungus, on garden Peas in the Lothians, near Edinburgh. Flowers of sulphur, thoroughly dusted on with a sulphur-puff or bellows, would check it. Spraying with Bordeaux Mixture will be more effective, but the low value of the crop raises the question whether it would pay to spray the plants several times each season."

It was stated that in some districts the cultivation of late varieties was given up owing to the excessive prevalence of mildew.

Fruits of Pyrus japonica.—Mr. DIVERS brought from the Duke of Rutland's gardens, at Belvoir, fruits of this species. Mr. HUDSON remarked that they made very good jelly.

Dr. MASTERS said that the fruits of *P. Maulei* were even better for that purpose.

Pea with a double plumule.—Mr. CUTHBERTSON sent, through Dr. Masters, a germinating Pea in which there were two cotyledons, and a radicle as usual, but the plumule, instead of being single, was double. Whether that doubling arose from the formation of two distinct plumules or from the branching of one, was not obvious.

Dr. MASTERS showed a drawing by Mr. Worthington Smith, illustrative of the peculiarity, upon which he made some comments.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 8.—The following awards were made on the above date:

FIRST-CLASS CERTIFICATES.

To *Cypripedium insigne* Sandere Peeter's var., shown by J. LEEMANN, Esq., Heaton Mersey.

Cattleya labiata alba, and *C. Gilmourae*, from S. GRATIN, Esq., Whalley Range.

AWARDS OF MERIT.

To *Cattleya* × *Chlois*, shown by the Hon. Mrs. BASS, Burton-on-Trent.

Cypripedium × *Tityus*, *C. A. Minosa*, *C. × insigne* magnificentum, and *C. nitens* Wrigleyanum, from O. O. WRIGLEY, Esq., Bury.

Cypripedium insigne var. *Gratrixæ*, from S. GRATIN, Esq., Whalley Range.

Cattleya labiata "Brazil," from J. LEEMANN, Esq., Heaton Mersey.

NOVEMBER 22.—O. O. WRIGLEY, Esq., Bury (gr., Mr. Rogers), exhibited a beautiful group of *Cypripediums*, principally hybrids; also some fine varieties of *C. insigne* and *C. × nitens*. A Gold Medal was awarded to the group.

FIRST-CLASS CERTIFICATES.

Cypripedium Swinburnei magnificentum, and *C. Leeanum* var. *conspicuum*, from O. O. WRIGLEY, Esq., Bury.

Laio-Cattleya × *Cappel*, Southgate var., from STANLEY, ASHON & Co., Southgate.

Odontoglossum crispum var. "Catherine Harding," from THE STONE ORCHID CO. (Sec., Mr. F. Stevens).

Odontoglossum vexillarium Leopoldii (confirmed), from T. BANTER, Esq., Morecambe, and W. THOMPSON, Esq., Stone.

AWARDS OF MERIT.

Odontoglossum Wilckeanum aureum, from W. THOMPSON, Esq., Stone.

Odontoglossum maculatum Thompsoni, from Mr. P. WEATHERS, Old Trafford.

Pleione maculata alba, from A. J. KELLING, Bingley.

Odontoglossum × *mulus* var. *Leopoldianum*, and *O. crispum* var. "Orion," from T. BANTER, Esq., Morecambe.

SILVER-GILT MEDAL.

To J. LEEMANN, Esq., for group.

ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER.

NOVEMBER 15, 16, and 17.—The Society's Annual Chrysanthemum Show was held in St. James's Hall on the above dates, and proved successful both from horticultural and financial points of view.

It is doubtful if there is a hall in England more suitably adapted for a Chrysanthemum show than St. James's, and the Society must be congratulated upon their enterprise in seeking to establish in Manchester, a really first-class show.

The 1st prize for a group of Chrysanthemums and foliage plants, arranged for effect in circular form, and occupying a space not less than 80 square feet, was won by Mrs. AGNEW, Fairhope, Pendleton.

G. H. GADSDEN, Esq., Adria House, Didsbury, and JAS. BROWN, Esq., Longfield, Heaton Mersey, won 1st prizes in the classes for specimen plants.

The leading class for incurved blooms was won by E. BEHRENS, Esq., Bettisfield Park, Whitechurch, and Mr. J. H. GOODACRE, Elvaston Castle Gardens, Derby, was 2nd.

The best collection of twelve incurved blooms, distinct, was shown by A. JAMES, Esq., Coton House, Rugby.

For thirty-six Japanese blooms, not fewer than eighteen varieties, nor more than two blooms of any one variety, E. BEHRENS, Esq., Bettisfield Park, Whitechurch, was 1st; and Mr. VALLIS, Bromham Fruit Farm, Chippingham, 2nd.

Mr. F. VALLIS won premier place in a class for eighteen Japanese blooms, not fewer than nine varieties, nor more than two blooms of any one variety.

The best collection of twelve Japanese blooms, distinct, was from A. JAMES, Esq., Coton House, Rugby.

JAS. WATTS, Esq., Abney Hall, Cheshire, won a 1st prize for thirty-six miscellaneous cut blooms.

The "Manchester" Challenge Cup, presented by JOHN WAINWRIGHT, Esq., J.P., and open to all comers (nurserymen excepted), in a class for forty-eight blooms (twenty-four Japanese, twenty-four incurved), distinct, was won by E. BEHRENS, Bettisfield Park, Whitechurch.

GOLD MEDALS AWARDED AS UNDER:

Mr. JOHN ROBSON, Altrincham, for Orchids.

Mr. JAS. CYPHER, Cheltenham, for Orchids.

MESSRS. DICKSON & ROBINSON, Manchester, for miscellaneous flowering plants, and a beautiful collection of Potatoes.

Mr. Doe gr. to Lord DERBY, for hardy fruit.

MESSRS. CANNELL & SONS, Swanley, Kent, for Pelargoniums, &c.

SILVER MEDALS

MESSRS. H. LOW & Co., Bush Hill Park, Middlesex, for Orchids.

MESSRS. CHARLESWORTH & Co., Heaton, Bradford, for Orchids.

MESSRS. WM. CLIBBAM & SON, Altrincham, for miscellaneous flowering plants.

MESSRS. DICKSON, BROWN & TAIT, Manchester, for miscellaneous flowering plants.

LOUGHBOROUGH AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

NOVEMBER 20.—A largely attended meeting of the members of this society was held on the above date. The president of the Association, W. C. BURDER, Esq., J.P., presided.

The event of the evening was a lecture given by Mr. F. W. E. SHRIVELL, F.L.S., F.R.H.S., of Thompson's Farm, Golden Green, Kent, upon the experiments carried out there upon the produce of kitchen garden and orchard by the scientific application of chemical manures, or rather their use in connection with farmyard-manure.

In a racy conversational style the lecturer gave valuable information concerning various crops upon which experiments were made, viz., Potatoes, Spring Cabbage, Asparagus, Broccoli, Gooseberries, Apples, &c. Showing the successful results in tabulated forms of the larger produce to be obtained by the use of chemicals at a less cost per acre than by the old-fashioned method of farmyard-manure alone.

The lecture was attentively listened to by a large appreciative audience, and at its close, a hearty vote of thanks was accorded the lecturer. D. R.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

NOVEMBER 20.—A meeting was held in the Society's room at the Sunflower Temperance Hotel, Croydon, on the above date. Mr. W. J. SIMPSON occupied the Chair, and Mr. MILLS the Vice-Chair. The attendance was good, about fifty persons being present. The secretary read a letter received from Mr.

J. W. Burbidge, M. A., Trinity College Botanical Gardens, Dublin, who had kindly presented to the Society copies of his two books, *Gardens of the Sun and Horticulture*. A vote of thanks was accorded Mr. Burbidge for his valuable present. To Mr. P. Bunyard was also given a vote of thanks for his useful present of six dozen exhibition vases. Mr. W. E. Humphreys, gardener at The Grange, Hackbridge, then gave a concisely worded lecture-paper entitled *Cattleyas*, but including in its scope *Laelias*, and *Laelio-Cattleyas*. The paper touched upon suitable houses, heating and ventilation, composts, pots and potting; the treatment of imported plants, crossing seedlings and their management, cultivation in general, insect pests, and diseases and their remedies. An unanimous vote of thanks was given Mr. Humphreys for his excellent lecture.

A fine collection of *Cattleyas* and other plants was exhibited by Mr. E. KROMER, Bandon Hill; by Messrs. PEED & SON. Mr. M. E. MILLS showed a dish of Pear Double de Guerre; and Mr. J. R. BOX, vegetables.

It was announced that the next address would be given by Dr. Brook Ridley, M.D., on December 4, the subject to be "Yews, Historical Trees, Clipped, and Hedges." J. G.

WARGRAVE GARDENERS'.

NOVEMBER 21.—At the usual fortnightly meeting, held on the above date, the Hon. Sec. (Mr. COLEBY) read an instructive paper on "South Africa and its Vegetation."

The general formation of the country was explained by reference to a map and section of the district from N. to S. The seasons and almost sudden transformation of the parched country after the rains into a "Paradise of flowers," was next described. A long list of bulbous and other plants which are cultivated by us under glass, there grow in profusion out-of-doors. A visit to Kew Gardens was recommended, as the South African collection is a very fine one.

Mr. M. Brodie, gr. to SYDNEY PLATT, Esq., Wargrave Hill, was the winner of the Cultural Certificate for the six best Blooms of Chrysanthemums. Some fine flowers were staged. M. C.

READING CHRYSANTHEMUM.

NOVEMBER 21.—An excellent exhibition was held in the Municipal Buildings, Reading, on the above date. The cut Blooms were more numerous than in any former year, but groups were fewer in number.

Besides Chrysanthemums there were classes for berried plants, Pelargoniums, Chinese Primulas, Roses, Orchids, Poinsettias, Palms, Cyclamens, Begonias, and other flowers, together with numerous classes for Apples, Pears, and Grapes. Many of the classes were thrown open, a good many were open to amateurs, and many were open only to subscribers. The Reading Chrysanthemum Society's Challenge Cup, value £15 15s., for the best group of Chrysanthemums grown in pots, was this year won by Mr. C. E. KEYSER, J.P. In the group of Chrysanthemums in pots, 20 square feet, open to subscribers only, the Gold Medal of the National Chrysanthemum Society was again won by Mr. MILTON BODE, who was successful in 1899. Sir CHAS. RUSSELL, Bart., took a 1st and a 2nd for Grapes. Among the most successful local exhibitors were Mr. C. Keyser, Sir Charles Russell, Bart., Alderman William Berkeley Monck, Mrs. Bland-Garland, Lower Redlands; Mr. Milton Bode, Mr. F. M. LONERGAN, Mr. W. G. Flanagan, and Mrs. Austen, Whitley Lodge.

The lady amateurs in the table decoration classes made an effective show with epergnes of Chrysanthemums and baskets of autumn leaves, flowers, and berries. As usual, Mrs. BAYFERN added greatly to the attractions of the show by a magnificent floral display artistically arranged on a background of dark blue velvet.

The attendance in the evening was very large, the crowd being so thick in every part of the building that promenading was out of the question.

Groups of Chrysanthemums.—1st, Mr. C. E. KEYSER, J.P., Aldermaston Court (gr., Mr. Galt); 2nd, Hon. W. F. D. SMITH, Greenlands (gr., Mr. Perkins); 3rd, Mr. W. BERKELEY MONCK, Coley Park (gr., Mr. Booker).

Group of Chrysanthemums in pots, not disbudded.—1st prize, Society's Gold Medal and 30s., 1st, Mr. W. B. MONCK; 2nd, Mr. F. M. LONERGAN, Cressingham (gr., Mr. Chamberlain).

CHRYSANTHEMUMS, CUT BLOOMS (OPEN).

Twenty-four incurved, distinct (Japanese excluded).—1st, Mr. J. B. HANKEY, Fetcham Park (gr., Mr. Higgs); 2nd, Mr. P. RALLI, Ashted Park.

Twenty-four Japanese, distinct.—1st, Mrs. CAMPION; 2nd, Mr. R. C. CHRISTIE.

Twelve incurved, distinct (Japanese excluded).—1st, Mr. A. HENDERSON, M.P.; 2nd, Mr. C. E. KEYSER.

Twelve Japanese, distinct.—1st, Mr. R. OVEY, Henley (gr., Mr. Smith); 2nd, Sir CHARLES RUSSELL, Bart. (gr., Mr. Cole).

Twelve Japanese blooms, arranged with small Ferns and foliage plants.—1st, Mr. R. MOSS, Blackwater (gr., Mr. Hunt); 2nd, Mr. MILTON BODE.

Group of cut Chrysanthemum-blooms, arranged with any kind of Ferns or foliage, to illustrate the decorative value of the Chrysanthemum. Epergnes or glasses for holding flowers allowed.—1st, Mr. R. MOSS, Fernhill; 2nd, Mr. MILTON BODE; 3rd, Mr. F. M. LONERGAN. Extra prize: Miss BRADLEY, Lady Warwick Hostel.

TABLE DECORATIONS (LADY AMATEURS ONLY).

Epergue of Chrysanthemums.—1st, Miss WILSON; 2nd, Miss BRADLEY, Lady Warwick Hostel.

Basket of autumn leaves, flowers, and berries, grown out-of-doors.—1st, Miss PHILLIPS, Abbott's Walk, Reading; 2nd, Miss BRADLEY.

OPEN TO SUBSCRIBERS WHERE NOT MORE THAN TWO GARDENERS ARE EMPLOYED.

Group of Chrysanthemums in pots, 30 square feet. 1st prize, Gold Medal, National Chrysanthemum Society, and £3. An edging of moss, Fern, or small foliage plants, permitted.—1st, Mr. MILTON BODE; 2nd, Miss WALLIS, Walmer, Bath Road (gr., Mr. Hinton); 3rd, Mr. W. POLE ROUTH.

In the classes for subscribers employing not more than two gardeners, amateurs, and open classes, there were numerous and excellent exhibits of Chrysanthemums, table plants, Orchids, Cyclamens, Primulas, Palms, Begonias, Grapes, and hardy fruit, which our space allows us only to mention.

ABERDEEN NATURAL HISTORY AND ANTIQUARIAN.

NOVEMBER 23.—The annual meeting of the members of this Society was held in the Botanical Class-room, Aberdeen University, on the above date. Dr. James W. H. Trail, the President of the Society, was in the chair, and there was a good attendance.

The Hon. Sec. (Mr. R. M. Clark), submitted his report, stating that there were now 202 members of the Society, and the arrangements for the winter's work had been very satisfactorily completed. The annual report of the Treasurer was also very satisfactory. The income for the year was £65 10s. 2d., leaving a balance, after meeting expenditure, of £52 9s., or an increase of £23 over the balance of the previous year.

The Chairman remarked that he was assisting the Buchan Field Club in working up the flora of the Buchan district of Aberdeenshire, but that was practically their own work in their own district, and the members of the Aberdeen Society were welcome to the printed notes on the subject, and might see the methods on which the work proceeded.

Office-bearers for the ensuing year were then appointed. Thereafter Dr. Trail delivered an interesting lecture on "How some Plants live, and the Effects on their Structure."

The lecture was listened to with great attention, and at the close, on the motion of Dr. Williamson, the Professor was heartily thanked.

BECKENHAM HORTICULTURAL.

NOVEMBER 23.—On the occasion of this meeting, a lecture was delivered by Mr. A. HEMSLEY on "Ferns and their culture," in which some valuable information was given, especially on the raising of Ferns from spores, the selection of fertile fronds, and treatment previous to sowing, being explained. The lecturer said that he never had favoured an elaborate preparation of pots or soil, he never used any crocks, but simply filled pans with good clean loam, surfaced with powdered crocks and charcoal. Unless a cross was desired, great care was necessary in sowing so that only one variety was sown in one pan, or the stronger growing species or varieties would choke the weaker; and a position where plenty of light, but no direct sun light reached the pans was very desirable. Pricking-off and potting were carefully detailed; also propagating by bulbils, rhizomes, stolons, and division. It was pointed out that a great evil in the cultivation of Ferns arose from the direction to afford plenty of water, plenty of shade, and plenty of pot-room, whereas there was no class of plants which resented excess in these directions sooner than Ferns.

Manure was recommended for healthy plants in active growth, but in small quantities only. A hearty vote of thanks was accorded the lecturer.

READING & DISTRICT GARDENERS'.

The subject of a paper read by Mr. T. TURTON, the well-known gardener at Sherborne Castle, Dorset, at the fortnightly meeting of the Reading and District Gardeners' Mutual Improvement Association was entitled "Wall Fruit Trees." An interesting discussion followed the reading of the paper. A hearty vote of thanks was accorded Mr. Turton. The exhibits included a number of Sutton's Selected Ailsa Craig Onion, and a basket of Coe's Golden Drop and Blue Imperatrice Plums, from Mr. STANTON.

NATIONAL CHRYSANTHEMUM.

(ANNUAL DINNER).

NOVEMBER 28.—The annual dinner of this Society was held in the Venetian Chamber, Holborn Restaurant, London, on Wednesday evening last. There was a moderate attendance, including a few ladies. The chair was taken by Mr. T. W. SANDERS, former chairman of the Executive Committee, who was supported on his right by Sergeant H. G. Bourne, member of the Hospital Corps serving with the Natal Army, and a member of the Wood Green Horticultural Society.

A letter was read from Mr. Percy Waterer, chairman of the General Committee regretting his inability to be present, and containing an appreciative reference to the services of Mr. Thos. Bevan and Mr. J. H. Witty, who, at very great trouble, and some personal expense, made an exhibit at the Paris Chrysanthemum Show, of which the English Society

was proud. Mr. R. Dean, the Society's secretary, also read several telegrams from members who were unable to attend.

After the Royal toasts had been honoured, the Chairman proposed the toast of the evening, "The National Chrysanthemum Society." He said that he was delighted to know that the Society had made splendid headway during the year. The public was not tired of the autumn flower, nor of the large shows. There was still plenty of enthusiasm on the part of cultivators and exhibitors. The two shows already held during the present season had been very successful, and incurred flowers had been exhibited especially well. There were now 837 members, and 143 affiliated Societies, including one in Germany, one in Denmark, and fourteen in the Colonies. Reference was made to the more careful system now practised by the Floral Committee when appraising the value of new varieties of Chrysanthemums, and it was said that during the present season that body had awarded seventeen First-class Certificates and eight Awards of Merit, besides several Commendations. The Society has now, said the Chairman, a reserve fund of £100. In a concluding appeal to all the members to sink any differences that there may now be or that may possibly arise, and unite in helping forward the interests of the Society, Mr. Sander said that the Society had the sympathy and support of the horticultural public and of the popular public.

"The Donors of Special Prizes" was proposed by Mr. C. E. Wilkins, the Society's treasurer, who, after heartily thanking those gentlemen who had assisted the Society in the past by offering special prizes for competition, pleaded that they were always more useful to the Society if unaccompanied by embarrassing conditions. The "Donors" included Sir E. Saunders, and Messrs. H. J. Jones, P. Waterer, J. T. Simpson, H. Deverill, W. Wood & Sons, J. Peed & Sons, Webb & Sons, R. Sydenham, and C. W. Richardson. This toast was responded to by Mr. J. T. Simpson, who will next season offer a special prize for the premier incurved bloom, as well as for the premier Japanese.

At this point in the proceedings, the interesting ceremony was commenced of presenting the National Challenge Trophy, Holmes Memorial Cups, and Medals of the National Chrysanthemum Society, and of the French Chrysanthemum Society, won at the November exhibition.

The National Challenge Trophy was won by the winners of last year, the Portsmouth and District Horticultural Society, but their representative, Mr. BERRY, was unable to be present to receive the handsome trophy.

The Holmes Memorial Cup, offered for the best collection of thirty-six incurved blooms, was presented to Mr. HIGGS, of Fetcham Park Gardens, Leatherhead, who, we believe, has won this honour on two preceding occasions. He received quite an ovation, as did also the youthful-looking Mr. VALLIS, of the Bromham Fruit Farm, Chippenham, who was presented with the Holmes Memorial Cup, offered for the best collection of forty-eight Japanese blooms. This exhibitor was cheered to an echo as he again approached the Chairman to be given the National Chrysanthemum Society's Gold Medal that he won with the £20 prize offered by Mr. H. J. JONES for the best sixty blooms shown in vases, and further, the Gold Medal of the French Chrysanthemum Society awarded in this class to what the French deputation rightly considered to be the best exhibit in the show. Then followed the presentation of the Silver Medal to Mr. NORMAN DAVIES, and the Gold and Silver Medals awarded by the National Chrysanthemum Society to non-competitive exhibitors.

Other toasts included "The President, Vice-Presidents, Officers, Auditors, and Committees of the Society," proposed by Mr. Jos. Lake, and responded to by Messrs. T. Bevan (Chairman of the Floral Committee), and H. J. Jones, "The Ladies," "The Visitors," "The Chairman," and "The Press."

Mr. Harman Payne, in proposing the toast of "The Chairman," related some interesting incidents in the experience of the Society's deputation to Paris.

The tables were freely decorated with Chrysanthemums, and the room itself with fine Palms. Thanks were accorded to the donors of these, and of the fruits for dessert.

Devon and Exeter Gardeners'.—The subject under discussion on November 4 was "Herbaceous Flowers for Exhibition," the essayist being Mr. H. HEMSLEY, of Messrs. ROBERT VEITCH & SON'S Nurseries. Mr. W. ANDREWS, Superintendent Gardener to the Exeter City Corporation, occupied the chair. The value of herbaceous plants, said Mr. HEMSLEY, was not fully appreciated. They were, most of them, hardy free flowering perennials, and were easily grown. As cut flowers, they were well adapted for home decoration, for they were lasting and easily arranged. By a judicious selection and a fairly long open border, plants might be had in bloom nearly all the year round. Speaking of the staging of herbaceous flowers at exhibitions, he deplored the fact that they were often huddled together in boxes, whereas if they were arranged as a parterre or bank, or 4-foot border, a picturesque arrangement could easily be made at a summer show. At the close of the meeting Mr. S. RADLEY exhibited an ingenious set of ten tubes for showing herbaceous flowers in. The set of six fitted into each other in telescope fashion, and when enclosed presented only one tube. The foot was a tin disc, with a groove in the centre, into which the tube slid easily, the disc being in proportionate sizes, and when put together making a parcel not bigger than a tea-saucer. The simplicity of the arrangement and its advantage in packing was apparent, more particularly to those who had had experience in staging and packing against time at flower shows.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period November 18 to November 24, 1900. Height above sea-level 24 feet.

1900.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			RAINFALL.	TEMPERATURE ON GRASS.		
NOVEMBER 18 TO NOVEMBER 24.		AT 9 A.M.		DAY. Highest.	NIGHT. Lowest.	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.		LOWEST TEMPERATURE ON GRASS.		
		Dry Bulb.	Wet Bulb.									
SUN. 18	N.N.E.	43°	40°	24°	04°	0	45°	49°	151°	935°	0	
MON. 19	N.N.E.	41°	37°	04°	03°	0	44°	48°	051°	733°	0	
TUES. 20	N.N.E.	42°	44°	04°	07°	0	44°	48°	251°	532°	0	
WED. 21	N.N.E.	43°	41°	04°	08°	0	44°	48°	151°	335°	0	
THU. 22	N.N.W.	42°	04°	08°	04°	0	45°	48°	151°	339°	0	
FRI. 23	S.S.E.	43°	32°	44°	72°	5	43°	64°	950°	922°	0	
SAT. 24	S.S.E.	42°	41°	04°	43°	7	42°	47°	350°	724°	0	
MEANS...	...	41°	33°	34°	13°	10°	44°	44°	251°	331°	0	

Remarks. — The weather during the week has been dry and dull, with cold winds, mostly from the northeast.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending November 17, is furnished from the Meteorological Office:—

"The weather during this period, although very cloudy and dull has been fairer over the Kingdom generally than for some time past. This was especially the case over the north-west of Great Britain, where the rainfall was very slight.

"The temperature was below the mean in most districts, but just equal to it in England, E. and N.E. In Ireland the temperature was as much as 5°. The highest of the maxima were recorded, as a rule, toward the end of the period, and ranged from 58° in the Channel Islands, and 55 in Ireland, S., to 47° in Scotland, E. The lowest of the minima occurred during the early days of the week in the north, but a few days later at the more southern stations. They ranged from 23° in Scotland, N. and W., and Ireland, N., to 29° in the Midland Counties, and England, N.E., and to 37° in the Channel Islands. The changes were frequent.

"The rainfall was rather more than the mean in Scotland, E. and Ireland, S., and just equal to it in the Channel Islands; in all other districts there was a deficit.

"The bright sunshine was deficient in most parts of the kingdom, but exceeded the mean for the time of year in England, S.W. and N.W., and also in Scotland, W. and N. The percentage of the possible duration ranged from 37 in England, S.W., to 13 in England, S., 12 in Scotland, E., and to 5 in England, N.E."

MARKETS.

COVENT GARDEN, NOVEMBER 29.

cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz. 5 0-7 0	Ferns, small, per 100 ... 4 0-6 0
Arbor-vitæ, var., doz. 6 0-36 0	Ficus elastica, each 1 6-7 6
Aspidistras, p. doz. 18 0-36 0	Foliage plants, var., each ... 1 0-6 0
— specimen, each 5 0-10 6	Lily of Valley, each 1 9-3 0
Cannas, per dozen 18 0-—	Lycopodiums, doz. 8 0-4 0
Crotons, per doz. ... 8 0-30 0	Marguerites, per dozen ... 8 0-12 0
Cyclamen, per doz. 8 0-10 0	Myrtles, per dozen 6 0-9 0
Dracenas, var., per dozen ... 12 0-30 0	Palms, various, ea. 1 0-15 0
— viridia, per doz. 9 0-18 0	— specimens, each 21 0-63 0
Ericas, var., per doz. 12 0-36 0	Pelargoniums, scarlet, per dozen 8 0-12 0
Eucalyptus, various, per dozen ... 6 0-18 0	— Ivyleaf, per doz. 8 0-10 0
Evergreens, var., per dozen ... 4 0-18 0	Spiraeas, per dozen ... 6 0-12 0
Ferns, in variety, per dozen ... 4 0-18 0	

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus "Fern," bunch ... 1 0-2 0	Maidenhair Fern, per doz. bunches 4 0-8 0
Carnations, per doz. blooms ... 1 0-2 0	Marguerites, p. doz. bunches ... 2 0-4 0
Cattleyas, per dozen 9 0-12 0	Mignonne, per doz. bunches ... 4 0-6 0
Eucharis, per dozen 2 0-4 0	Odontoglossums, per dozen ... 4 0-8 0
Gardenias, per doz. 1 6-2 6	Roses, Red, per dozen ... 1 0-3 0
Lilium Harrisii, per dozen blooms ... 4 0-6 0	— Tea, white, per dozen ... 1 0-3 0
Lilium lanceifolium album, per dozen blooms ... 1 6-3 0	— Safrano, per dozen ... 1 0-2 0
Lilium rubrum, per dozen ... 3 0-5 0	— Catherine Merm., per dozen ... 2 0-4 0
Lilium longiflorum, per dozen ... 4 0-6 0	Smilax, per bunch ... 3 0-5 0
Lily of Valley, per doz. bunches ... 6 0-12 0	Tuberose, per doz. blooms ... 0 3-0 6

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, English, per bushel ... 2 6-4 0	Grapes, Almeira, bris 16 0-25 0
— cookers, large ... 2 6-4 0	Lemons, case ... 8 0-15 0
— various ... 1 6-3 0	Lyches, new, pkt. 1 0-—
Cox's, in sieves ... 3 0-4 0	Medlars, case ... 2 6-—
Kings, bush ... 3 0-4 0	Melons, each ... 1 6-3 0
Blenheims, bush ... 3 0-5 0	Oranges, Teneriffe, case ... 2 6-6 3
Ribston's, bush ... 4 0-6 0	— Murcia, case ... 7 0-11 0
— Nova Scotia, per barrel ... 12 0-16 0	— Tangerine, box 1 0-1 3
— Californian, per box ... 7 0-10 0	— Jaffa, case ... 19 0-—
Bananas, bunch ... 6 0-10 0	Pears, home grown in sieves ... 3 0-4 0
— loose, per doz. 1 0-1 6	— stewing, crates 4 0-4 6
Gobnuts, lb. ... 0 5-—	— Californian, half case, and Glout Moreau ... 15 0-—
Cranberries, case ... 15 0-—	— French, Glout Moreau, crates 4 6-6 6
— quart ... 0 7-—	Persimmons or Kaki, per doz. ... 1 6-3 0
Russian kegs ... 1 0-—	Pines, each ... 2 6-4 0
Chestnuts, per bag ... 8 0-14 0	Quinces, per sieve 1 6-2 6
— Italian, lb. ... 12 0-17 0	Sapucaia nuts, lb. 1 3-—
Grapes, Alicante, per lb. ... 0 6-1 3	Walnuts, Grenoble, per bag ... 6 0-6 6
— Colmar, A ... 1 6-1 0	— in bags, large ... 10 0-14 0
— B ... 0 8-1 0	
— Muscata, A, lb. 2 6-3 0	
— B, per lb. ... 1 6-1 9	

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz. ... 2 6-4 6	Lettuce, French Cabbage, doz. ... 0 10-1 0
— Jerusalem, sieve 1 0-1 6	— English Cos, per score ... 1 0-2 0
— Stachys or Chinese, per lb. 0 8-—	Mint, per doz. bunches, new ... 0 8-—
Beans, dwf. Madeira, per bkt. ... 3 0-4 0	Mushrooms, house, per lb. ... 1 9-—
— Ch. Islds., dwf., new, per lb. ... 1 0-1 3	Onions, picklers, per sieve ... 3 0-—
— French, pkts. ... 0 6-0 7	— per bag ... 3 0-3 6
Betroot, bushel ... 1 0-1 6	— cases ... 6 0-7 6
Beet, per dozen ... 0 6-—	— English, p. cwt. bag ... 4 0-4 6
Brussel Sprouts, per sieve ... 0 6-1 3	Parsley, 12 bunches—per sieve ... 1 0-1 6
Cabbage, tally ... 1 0-1 6	— per bundle ... 6 0-9 9
— dozen ... 0 6-—	Parsnips, in cwt. bags ... 2 6-3 0
Carrots, 12 bunches—washed, in cwt. bags ... 2 0-2 6	Potatoes, per ton ... 75 0-100 0
Cauliflowers, per dz. tally ... 4 0-8 0	Radishes, per 12 bunches ... 1 0-1 6
Celery, per dozen ... 1 6-2 0	Salad, small, punnets, per dozen ... 1 3-—
Celery, doz. bndls. 10 0-12 0	Savoy, per doz. ... 0 6-1 0
— unwashed, doz. 7 0-9 0	— per tally ... 2 0-4 0
Chicory, per lb. ... 0 3-—	Shallots, new, p. lb. 0 3-—
Oress, doz. punnets 1 6-—	Spinach, per sieve—bushel ... 1 0-1 6
Cucumbers, doz. ... 2 0-4 6	Tomatoes, English, new, per 12 lb. ... 5 0-—
Endive, new French, per dozen ... 1 0-1 6	— Channel Islands, per lb. ... 0 3-—
— English, score 1 0-—	— Canary deeps ... 3 0-4 0
Garlic, new, lb. ... 0 3-—	Turnips, per dozen in bags ... 2 0-2 6
Horseradish, English, bundle ... 1 6-2 0	Watercress, p. doz. bunches ... 0 4-0 6
— foreign, v. bdle. 0 9-1 0	
— loose, per doz. 1 9-—	
Leeks, per dozen bunches ... 1 6-—	

REMARKS.—Prune-Plums are now past, but there are a few on the market unsaleable, owing to their condition. Some Brazil pods are on sale at 9s. per dozen. "Grape fruits" from the Bahama Islands, in boxes of 40 to 60, realised 12s. per box. Figs are now over for the season. The Tenerife Oranges vary considerably in numbers and size.

POTATOS.

Potatoes: Various sorts, 75s. to 100s. per ton; foreign bags, 50 kilo, 2s. 9d. to 3s. 9d. John Bath, 32 & 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: November 29.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report a thin attendance on to-day's market, with a paucity of transactions. Just now scarcely any attention is being given to either grass or clover-seeds, meanwhile full prices are asked for Mustard and Rapeseed. There is no alteration this week in either Tares or Rye. As regards Canary-seed, an improved feeling is shown, but lower rates are accepted for Hempseed. Peas and Haricots present a firm market, whilst there is a fair demand for Longpod, Windsor, Canadian Wonder, and Scarlet Runner Beans.

FRUIT AND VEGETABLES.

GLASGOW: November 28.—The following are the averages of the prices recorded since our last report:—Apples, Canadian Kings, 10s. to 12s. per barrel; Greenings, Baldwin's, Spies, 8s. to 11s. to 12s. per doz.; United States, various sorts, 5s. to 14s. do.; Boston, 11s. to 14s. do.; Pears, Magnifiques, three layers, 11s. to 14s. per crate; Bon Cœurs, three layers, 7s. do.; Case Pears, Glout Moreau, 3s. 10s., 4s. 8s., 5s. to 7s.; do., 60's and 70's, 4s. 10s. to 5s. 6d.; Easter Butter, 5s.; Californian, 10s. to 16s. per box; Oranges, Dallas, 10s. 6d. per case; Mahon, various counts, 8s. 6d. to 10s. 6d. per box; Grapes, English, 1s. to 2s. per lb.; do., Almeira, sound, 11s. to 22s. per barrel; do., showing slight waste, 7s. to 12s. do.; waxy, 2s. to 3s. do.; Bananas, extra, 10s. to 10s. per bunch; No. 1, 7s. to 8s. do.; No. 2, 5s. to 6s. do.; Lemons, Messina, 300's, 10s. to 11s.; 500's, 8s. 6d.; most other qualities, 5s. 6d. to 7s. 6d. per case; Tomatoes, Canary deeps, finest, 3s. 6d. to 6s. per box; others, 3s. to 4s.; Mushrooms, 1s. 6d. to 1s. 9d. per lb.

LIVERPOOL: November 28.—Wholesale Vegetable Market. Potatoes, per cwt.: Lyonn Gray, 3s. 4d. to 3s. 8d.; Bruce, 3s. 6d. to 4s.; Up-to-Date, 3s. 4d. to 3s. 10d.; Main Crop, 3s. 6d. to 4s. 3d.; Turnips, 6d. to 8d. per dozen bunches. Swedes, 1s. 2d. to 1s. 4d. per cwt.; Carrots, 6d. to 8d. per dozen bunches, and 2s. 3d. to 3s. 3d. per cwt.; Onions, English, 5s. to 6s. per cwt.; do., foreign, 3s. to 2s. 6d. do.; Parsley, 4d. to 6d. per dozen bunches; Cauliflowers, 10d. to 2s. per dozen; Cabbages, 6d. to 10d. do.; Celery, 8d. to 1s. 6d. do. St. John's: Potatoes, 1s. to 1s. 2d. per peck; do., new, 6d. per lb.; Grapes, English, 1s. 3d. to 2s. 6d. per lb.; do., foreign, 4d. to 6d. do.; Pines, English, 4s. to 6s. each; Apples, 1d. to 2d. per lb.; Pears, 2d. to 4d. do.; Tomatoes, 6d. do.; Asparagus, 1s. per bundle; Cucumbers, 6d. each; Mushrooms, 1s. 4d. per lb. Birkenhead: Potatoes, 1s. to 1s. 2d. per peck; Cucumbers, 3d. to 6d. each; Grapes, English, 1s. 6d. to 8s. per lb.; do., foreign, 10d. to 8d. do.; Mushrooms, 1s. to 1s. 6d. do.; Filberts 10d. do.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending November 24, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.	1900.	Difference.
Wheat	s. d. 25 8	s. d. 27 2	+ 1 6
Barley	s. d. 26 2	s. d. 25 10	- 0 4
Oats	s. d. 16 7	s. d. 17 0	+ 0 3

TRADE NOTICE.

MR. ARTHUR W. WADE, who left the Royal Gardens, Kew, in 1891, and for the past five and a half years has been manager to Messrs. Wallace & Co., Kilnfield Gardens, Colchester, intends to commence business as a nurseryman and seedman on January 1, 1901, at Riverside Nursery, North Station Road, Colchester.

GARDENING APPOINTMENTS.

MR. THOS. TURNER, as Gardener to G. S. WALMSLEY, Esq., Shrubhill Place, Sunningdale, Ascot.

MR. DAVID FOWLER, for the last three and a half years as Gardener to the late Sir GEORGE LONG Beaumont House, Windsor, as Gardener to Lord BATEMAN, Shobdon Court, Shobdon, Herefordshire.

MR. T. MORANT, as Gardener to H. BESSEMER, Esq., Moccas, Bitterne, near Southampton.

CATALOGUES RECEIVED.

CLARK BROS. & Co., 65, Scotch Street, Carlisle—Forest, Ornamental and Fruit Trees, Roses, &c.

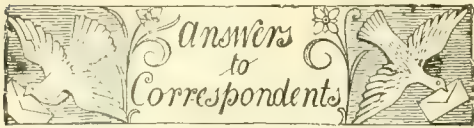
HOGG & ROBERTSON, 22, Mary Street, Dublin—Trees and Shrubs, Fruit Trees, Roses, &c.

F. ROEMER, Quedlinberg, Germany—Seeds.

GEO. PYNE, Denver Nurseries, Topsham, Devon—Select Hardy Fruits.

HOLDSWORTH'S PATENT BARROW COMPANY, Park Road, Keighley.—Various New Bearings and Wheels for Barrow.

HOGG & WOOD, Coldstream, N.B.—Nursery Stock of Trees and Shrubs, Clematis, Roses, Rhododendrons, Fasti Trees, &c.



BEGONIA LEAVES DAMAGED: *J. S.* The rusty-looking appearance on the Begonias is common in autumn and winter, especially where the plants are kept too moist, and too far from the roof-glass. Remove the bad leaves, place the plants on a shelf near the glass, and apply less water. Sometimes the appearance is due to the attack of mites, for which tobacco-water may be used.

BOOKS: *W. F., Sweden.* In the English language, one of the best is *Bull's Herefordshire Pomona*. It is, doubtless, unattainable, except at the second-hand bookshops. An unillustrated *Manual* is one by Dr. Robert Hogg, Fifth Edition, published at 12, Mitre Court Chambers, Fleet Street, London, E.C. As a work on the cultivation of fruit, get *Fruit Farming for Profit*, by George Bunyard, Maidstone (F. Bunyard, 29, Week Street).

BRACKEN: *A. B.* Cut the bracken root-masses as sods of 1 foot square and deep, and plant in deeply-dug sandy-land at the same depth, and closely or wide apart as may be desired. If the land is poor, work-in peat or leaf-mould with the staple in filling-in round the clumps. The operation may be undertaken late in the winter or early spring.

CARNATION SOUVENIR DE LA MALMAISON DISEASED: *A. B.* Your plant is attacked by a fungus called *Helminthosporium*. The disease was figured and described in our issue for August 21, 1886. All diseased leaves must be removed and burnt forthwith. Sulphuring will do good, as will sulphide of potassium applied at the rate of ½ oz. to 1 gallon of water, used by means of a spray-syringe. Plants badly affected should be burnt.

CATTLEYA LABIATA: *N. D. L.* Your flower has three sepals, three petals, a lip, and a column, with a petal-like out-growth, otherwise normal. The additional petals are probably due to augmentation of their number, not to any change in the stamens.

CHRYSANTHEMUM-BUDS INJURED: *H. W. N.* You have sent four different kinds of insects, viz.: 1, two species of plant-bugs; 2, the common cuckoo spit insect; 3, the larvæ of a beneficial Dipterous insect. 1, has probably caused the injury to the Chrysanthemum, and the safest and most effectual remedy is to go over the plants once or twice a week, giving them a tap with the hand over a bag-net, or similar contrivance, which would catch any falling insects. As a preventative, isolate your plants from all other vegetation.

CHRYSANTHEMUM LEAVES: *W. W., Yelverton.* Yours is a very bad case of Chrysanthemum-rust, caused by a fungus (*Puccinia Hieracii*), and figured and described in *Gardeners' Chronicle*, October 8, 1898, p. 269. When the leaves have fallen from your plants, the plants will be entirely free from the disease, but may become inoculated with it again by bodies produced by the winter spores. Burn all the leaves and shoots that you remove from the plants. During next spring you should spray your young plants occasionally with a solution of potassium sulphide at the proportion of one half-ounce of the sulphide to a gallon of water.

CHRYSANTHEMUMS: *G. S.* In order to be able to exhibit twelve distinct varieties with success, you should cultivate at least double that number of varieties most suitable for this purpose. The following varieties may not be the very best, for all such opinions are arbitrary, and there is much room for differences of opinion; but well-grown blooms of any one of them are sufficiently good to include in collections of twenty-four or twelve blooms:—Le Grand Dragon, Madame Carnot, Mrs. Mease, Lord Ludlow, Mrs. Barkley, Mrs. J. Lewis, Mrs. H. Weeks, M. Chenon de Leché, Calvat 1899, Edwin Molyneux, Eva Knowles, Mr. Carrington, Australia, R. Hooper Pearson, Mrs. White Popham, Mrs. Coombes, Vivian Morel, Mrs. J. Bryant, Simplicity, Lord Salisbury, M. Louis Remy, and Phebus. A few of the varieties which have been exhibited this

autumn for the first time should also be obtained, notwithstanding that their cultivation during the first season must needs be more or less experimental.

CORRECTION.—In the account of *Iris urmiensis*, at p. 373, the flower is unfortunately described as crimson, instead of primrose coloured; and *Iris Gatesi* was spelled incorrectly as *I. Gartesi*.

ERICA HYEMALIS FAILING: *W. B.* If the plants were well-grown purchased plants recently acquired, the failure of the buds might arise from the change from one place to the other; or the change from cold frame to warm house might have caused it. A very slight degree of warmth above the temperature of a cold greenhouse is all that should be given in hastening the flowering of *Ericas*. If the plants had been allowed to get dry, we think the foliage would have shown it. Fogs sometimes cause failure of this kind.

GARDEN-APPRENTICE: *L. S. D.* In the absence of an indenture, we think that you could not retain the lad, after he had given a rather long notice to quit the service; which, however, he afterwards shortened to one week. You would not be justified in refusing to pay him his wages for the time that he continued to do his work properly.

GARDENING CLUBS, &c.: *E. Higgins.* The information required can be obtained from *The Garden Annual*, published by W. Robinson, 37, Southampton Street, Strand, London, W.C.

INSECTS: *S. Kerry.* The grubs are those of the common garden swift moth (*Hepialis lupulinus*), closely allied to the species you suggest as causing the injury. It is by no means rare for this pest to attack the roots of *Pæonies*, and other herbaceous plants, and we have frequently, in past years, called attention to its ravages and treatment.

INSECTS: *F. G. S.* The grubs of the cockchafer—very destructive.

IRIS KEMPFERI: *Constant Reader.* Plant the roots close to water, but not in ground that is under water for any length of time. The side of a watercourse or ditch, lake, or the like would be a suitable spot. Soil not particular, but that which is peaty and slightly sandy suits the plant best.

LIME ROOTS: *J. R. W.* The roots are attacked with the spawn of a fungus which is killing the bark and young wood. Perhaps the trees were out of health before the fungus came. Fruit shortly.

MOSS ON LAWN: *S. L., Croydon.* See our issue for November 24, where full instructions are given.

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can consistently with our editorial work, but as the naming entails much labour and considerable cost we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay is often unavoidable.

MOFFATT. Your specimens were decayed on arrival here.—*J. J. R. W.* Round Winter Nonsuch.—*Carnarvon.* 1, White Virgin; 2, Crassane; 3, Scarlet Pearmain; 4, Lucombe's Pine-apple.

J. S. S. We cannot congratulate you on your system of labelling the fruits sent; one fruit had also decayed on the journey, and caused the separation and obliteration of two labels, 1 and 3 could not in consequence be indicated; 2, Beurré Bachelier; 4, Maréchal Vaillant; 5, Bergamotte d'Esperen.—*F. L.* 1, Calville Rouge d'Hiver; 2, Hoary Morning.—*W. H.* 1, Beurré Bosc; 2, Partly decayed, but it appears to be De Marais.—*A. C.* 1, Beurré Clairgeau; 2, Queen Caroline.—*R. M. Y.* We take your Apple to be the White Paradise, or Egg Apple of some authors. It has also been known under several other names, and is considered to be of northern origin.—*Orchard.* 1, Beurré d'Aremberg; 2, Dr. Andry; 3, Fondante du Comice; 4, Brown Beurré; 5, Cellini; 6, Irish Reinette.—*G. D.* 1, Harvey's Wiltshire Defiance; 2, Ecklinville; 3, Dumelow's Seedling; 4, Hawthornden; 5, Nelson Codlin; 6, Cellini.—*W. T.* The Pears were very poor samples, and in bad condition; 1, Beurré Clair-

geau; 2, Gendebien; Apple, Court of Wick.—*G. J. F.* Pears: 1, rotten; 2, Nouveau Poiteau; 3, Fondante de Charneu. Apples: 1, Alfriston; 2, Cox's Pomona; 3, Lane's Prince Albert.—*C. P.* The Pears were in very bad condition, over-ripe and smashed; we can only name the following: 2, Triomphe de Jodoigne; 3, Duc Alfred de Cruz; 5, Rousselet de Jonghe.—*E. T.* 1, nearly related to No. 6, perhaps a seedling; 2, Round Winter Nonsuch; 3, Adam's Pearmain; 4, Rondelet; 5, Lemon Pippin; 6, Dumelow's Seedling.—*J. C. W.* 1, Hutton Square; 2, Nelson Codlin. Please send better developed specimens of the others; we have failed to determine them at present, though they nearly approach several varieties.—*J. M.* None of the specimens were in good condition, being immature and small; 1 and 2 were not recognisable; 3, Dumelow's Seedling; 4, Northern Greening; 5, Green Tiffing; 6, Winter Greening.—*S.* 1, Peasgood's Nonsuch; 2, Calville Rouge d'Hiver; 3, Cornish Gilliflower.—*Will Chiswick, H. A. B., South Nutfield, and W. J. B., Milford.* please describe how their fruits were packed? They have not been traced at present.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*F. E. F.* One of the early garden varieties of the greenhouse Rhododendron, and known as R. Princess Royal.—*B. W. F.* 1, Hibiscus schizopetalus (see *Gard. Chron.*, August 30, 1879); 2, Cestrum elegans; 3, Photinia serrulata.—*Frances.* Cotoneaster affinis. The berries are not at all likely to be poisonous.—*Reader.* 1, not identified; 2, Berberis Mahonia; 3, Ruscus hypophyllum; 4, Skimmia japonica; 5, Cistus; 6, Escallonia rubra.—*G. S.* We cannot undertake to name varieties of florists' flowers.—*O. L.* A finely-flowered example of *Bignonia venusta*, a native of Brazil. See fig. in *Gardeners' Chronicle*, March 1, 1879, p. 273.—*R. W.* 1, Pleurothallis cardiostola; 2, Restrepia elegans; 3, Bulbophyllum imbricatum; 4, Pleurothallis rubens; 5, Cymbidium giganteum; 6, Bulbophyllum spathaceum.—*Rev. C. S.* Cypripedium venustum pardinum.—*J. S.* Cymbidium Tracyanum.—*H. T.* 1, Asplenium filicoides; 2, Polystichum angulare proliferum; 3, Polypodium aureum; 4, Pteris longifolia; 5, Asplenium bulbiferum biforme; 6, Adiantum capillus-veneris variety.—*J. B.* Epidendrum fragrans.—*H. C.* 1, Cattleya labiata; 2, Zygopetalum Mackaii; 3, Pteris, of garden origin; 4, Davallia canariensis; 5, Blechnum occidentale; 6, Saxifraga sarmentosa.

PEAR: *Totteridge* sends a Pear wrapped up in paper only, through the post. No wonder it was smashed and rotten.

SNAILS: *A. H. S.* *Bulimus Goodali*; voracious feeders on vegetation. See note and figures in present issue, p. 404.

TOMATO A FRUIT OR VEGETABLE: *Osmond.* Botanically it is a fruit, for garden or kitchen purposes it is a fruit used as a vegetable or a salad; rarely it is used at dessert.

COMMUNICATIONS RECEIVED.—Heath & Son—D. A.—W. G. P. E. R. B. W. Cox.—A. W. G.—F. H. F.—W. K.—A. A.—B. W. B.—C. T. D.—E. C. H.—T. M.—D. T. F.—S. W. F.—J. O. B.—A. D.—T. C.—N. Z.—G. B. M.—Corycius senex.—R. P. B.—W. R. F.—W. Wall.—J. W. B.—W. H. C.—A. P.—W. W. P.—Cardiff—T. W.—F. W. B.—H. Medlock.—F. G. B.—E. R.—Bilton.—W. G. P.—H. S.—G. G.—W. Cole.—H. Q.—Herd, Bros.—J. Hoog—F. T. M.—G. D.—W. B.—C. P.—W. E.—J. B.—M. E.—S. W. F.—D. and W. B.—D. A.—W. C.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—J. W.

DIED.—We regret to record the death of Mrs. Lowe, wife of Mr. R. B. Lowe, head gardener to Earl Brownlow, Ashridge Park, Berkhamsted, on the 20th inst., after a long and painful illness.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



VIEW IN THE GARDENS AT PADDOCKHURST (SIR WEETMAN PEARSON, BART., M.P.).



THE

Gardeners' Chronicle

No. 728.—SATURDAY, DEC. 8, 1900.

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DAUGHTERS OF THE YEAR, NOVEMBER.

"NOVEMBER is come, dark, dreary, November," says Mrs. Marcet in her delightful *Willie's Seasons*, the earliest book which I remember to have devoured for my own amusement, now, alas! near seventy years ago. I think we were better off for nursery books in the early Thirties than children are to-day. Two they have which we had not, *Hans Andersen* and *Alice*; but we had *Gammer Grethel*, *Miss Edgeworth*,—I know old folk to-day who, still under the spell of *Waste not Want not*, will never cut but always untie a knot; we had the *Peacock at Home*, the *Transmigrations of Indur*, *Peter Parley*, *Mrs. Trimmer's Robins*. I must not go on, but from my children's nursery library once, from my grandchildren's to-day, I cannot match these six.

November has not this year deserved its evil name. My garden diary records more sunny days than wet; days on which I could sit out and watch my gardener at work, and the robin ever perched beside him. The rural patriarch who ordinarily turns the clod and wheels the compost home is insufficient for the niceties of autumn reconstruction, and I have

enjoyed the help of an expert. From a famous garden has come the present of more than thirty choice plants, and to make room for them that they may fill the land, tasked brain as well as hand. I drew out an elaborate map of the largest border, and by this we worked, discarding, shifting, introducing, till we had a hundred plants in place, with an edging infinite and varied. To gardeners like-minded with myself, but not so well equipped, I sent five hampers of superfluities, amongst them well-rooted cuttings of Napoleon Willow, and some scarlet Chestnuts grown from seed gathered in the Forest of Dean; consigning, lastly, to less honourable, but not inconspicuous beds the plants dethroned from highest place, but much too good to lose. Bulbs were put in long ago, with the exception of the later Lilies. I have tried to scheme one large bulb-bed which shall be gay all the year. I dug it 3 feet deep, trampled and chopped upon the bottom a layer of herbaceous refuse, put in good leaf-mould, planted my bulbs, and filled up with the old soil. To meet the fact that while for instance Crown Imperials are planted in October, Gladioli cannot be put in till April, I have sunk, wherever late bulbs are to grow, boxes of the required depth, which I have filled with Tulips. In spring the Tulips will be past their bloom, the boxes will be lifted, summer bulbs will take their place; and I hope for continuous supply of colour from the earliest China-dox, as my unclassical expert calls it, until Lilies and Gladioli quail before the first sharp frosts. A common idea possibly, but I have never seen it; "a poor thing, Sir, but mine own," as Touchstone says of his ugly wife.

The spring biennials are all in place: double Wallflowers, the finest I have ever reared, fringed by *Silene compacta*, fill the raised beds on either side the door; patches of single Wallflowers, yellow, bronze, and of the newer sort called Vulcan, stand mixed with *Honesty* at intervals among the herbaceous plants, to make way in June for the half-hardy annuals. All the other borders, surrounding the lawn or cribbed from kitchen garden, are edged with bounteous lines of *Arabis*, *Aubrietia*, *Limnanthes*, *Daisy*, *Polyanthus*, *Dondia*, *Myosotis*. An ample bed of Pinks from Cowper's Olney garden, worn out with age, and having in the spring yielded scions now well rooted, is filled with Brompton Stocks, not without anxiety for the winter. The pergola has been trimmed, the rosary forked, some failing plants rejected and replaced, fresh *Violas* and *Pansies* inserted amongst the trees. The spaces between newly-planted shrubs, as *Deutzia*, *Weigela*, *Philadelphus*, *Leycesteria*, are filled with *Hyacinths*, *Canterbury Bells*, *Scabious*, and seedling Poppies.

The year's bloom has even yet not altogether gone. Delightful surprises greet us, not only of *Roses*, but of belated *Viola*, *Anemone*, lovely *Hypericum Moserianum*, *Marguerite-Carnation*. The *Aralia* blooms still last, and *Chrysanthemums* linger on. These have never been so fine; Source d'Or, W. H. Lincoln, *Mesdames Carnot*, *Grünwald*, *Comte Desgranges*, were as large and as profuse as though growing under glass. *Cotoneaster* leaves and berries have vied in crimson glow; a short hedge of *Beech* retains its red, dry leaves; the long-curved, feathery awns of *Clematis vitalba* justify its popular name of Old Man's Beard; and the Flower de Luce, *Iris foetidissima*, brought nine years ago from a Somersetshire lane, expands its three-starred fruit set thick with shining scarlet seeds. It fills an antique vase in my library,

flanked by some spikes of Pampas-grass; both will retain their beauty through the winter.

We dug up at the end of the month our first dish of *Crônes du Japon*, or Chinese Artichokes, botanically *Stachys tuberosa*. I know no more delicious vegetable; it must be soaked for five minutes in boiling water, then simmer in fresh butter for five minutes more. Planted in sand soon after Christmas, it is grown with ease. I wonder that it is not oftener seen. And we have just begun upon Jerusalem Artichokes—amusing name of a vegetable which is not an Artichoke, and has no connection with Jerusalem—fried in thin slices like Potato-chips, a hint we owe to Mrs. Earle. I hoped that some of the plants would flower in this wonderful season, but we are too far north.

The fieldfares and redwings are with us, and the ugly, surly flannel-back or hooded crow,—"Densh," or Danish crow, they call it here—feeding greedily amongst the feculent night-soil from the town, with which our farmers dress their land, as inevitably solitary as its rook-cousin is gregarious. The robin practises his winter note—"hark at him weeping!" the folk here say; the tits have come to feed on the pendent Sunflower-heads. Our beautiful "greenbird" was with us till the end of the month, may not yet be gone. An erudite friend, who has penetrated my Corycian identity, writes that it must be the *Icterus* mentioned by Pliny. The sight of it, he says, heals jaundiced patients, but the cure costs the bird its life. I shall keep all such sufferers well away from ours.

So after all, to the cultivator at any rate, November is not altogether a dreary month. It is sad, no doubt, in a year mild as this has been to sit at Nature's lingering death-bed; but the gardener leads a dual life, sometimes of rapture in the present, always of confidence in the future. Nay, apart from prospect of the spring, even midwinter has for him its present interest, as he contemplates the people of his pasture hibernating out of sight in Nature's laboratory. He welcomes frost, for it confirms their rest; snow, for it protects their tenderness; drought, for it facilitates their storage; wind, for it beats harmlessly above their sheltered head; hail, snow, tempest, wind, and storm, fulfil alike the word of Him who planted the first garden in Eden eastward, and set there man (and woman) to dress it and to keep it. *Corycius senex*, *Lincolnshire*.

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM INSIGNE CHANTINI LINDENI.

THIS descriptive, though rather lengthy name, is given by M. Linden, l'Horticole Coloniale, Brussels, to a remarkably fine yellow form of *Cypripedium insigne*, having the large size and fine form of *C. insigne Chantini*, and consequently nearly allied to the true *C. insigne Ernesti*, which, although represented by name in several gardens, is rarely to be met with except in the gardens of R. I. Measures, Esq., who acquired the first plant and named it after his son.

The flower submitted by M. Linden is certainly of the largest form of yellow *C. insigne*, and of fine proportions. The dorsal sepal is 2½ inches wide, and 3½ inches high. The basal area is greenish-yellow, the upper part pure white. On the yellow ground are numerous indistinct raised blotches of a darker hue, and on the white margin are a few pale purple spots. The lower sepal is large and of a greenish-yellow; lip and petals clear yellow with a faint darker reticulation. The

flower measures 5½ inches across, and the scape bears one fully-expanded flower and a large flower-bud. One of its tendencies is, it is said, to produce twin-flowered inflorescences. Yellow-coloured varieties of *C. insigne* are prime favourites with most persons, and some of them are, in the highest degree, ornamental; but they have been instrumental in getting scarcely deserved recognition for several very poor things. *C. insigne Chantini Lindeni* is one of the best (see fig. 125, p. 411) *J. O'B.*

"DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDÉES"

The last number of this very serviceable little publication contains coloured figures and descriptions of the following species and varieties. The Editor notes that amateurs most frequently send him hybrid or garden forms instead of species. The consequence is, that collectors often send forms so much alike that it is not desirable to illustrate them all. In future, M. Cogniaux will wait till he has obtained a sufficient number of species before he publishes a part. No charge will be made for illustrating species, but for hybrids and garden-forms a charge of 20 francs—the cost of the water-colour drawing—will be made. The subscriber will receive the original drawing signed by the artist and framed, as well as twelve copies of the chromo-lithograph. Those who require more than twelve copies will have to take 300 copies at a cost of 100 francs. The editor reserves the right to exclude insignificant varieties, or those which are too nearly alike to others to be worth figuring. Nevertheless, anyone desiring of having his plant illustrated can do so on payment of 100 francs as above mentioned, and the plate will be published as a supplement or extra plate.

CYPRIPEDIUM CARDOSANUM × (Peeters).—A hybrid from *C. barbatum* var. *Warnerianum* by *C. Leeanum* var. *Albertianum*.

CATTLEYA ELDORADO (Linden).—A beautiful form in which the broad, rosy-lilac petals are tipped with purple, the lip erect at the base, expands into a flat, oblong disc with a central orange blotch edged with white. The margin is rosy-purple.

CYPRIPEDIUM ATRUM "CYRUS."—A form originating from a cross between *C. Spicerianum* and *C. nitens* var. *Sallieri Hyeanum*.

CATTLEYA VULCAN.—Hybrid raised by Mr. Peeters by crossing *C. Mossiae* with pollen of *C. Schilleriana*. Colour dull red, lip reddish-purple.

CYPRIPEDIUM ADRASTUS var. *HURSTII*.—A cross between *C. Bexalli* by *C. Leeanum*.

EPIDENDRUM ELEGANTULUM var. *LEUCOCYLLA*.—Segments greenish, three-lobed, lip white.

MILTONIA REGNELLI var. *VITICIANA* (Cogniaux).—Segments pale yellow flushed with pale purple; lip white, traversed with rosy-purple veins.

ODONTOGLOSSUM CORONARIUM (Lindley).

ODONTOGLOSSUM CRISPUM var. *MADAME EMILE PRAET*.—Segments broadly lanceolate, lobulate at the margins, white, heavily blotched with reddish-brown spots; lip narrow, similarly spotted; disc yellow.

ODONTOGLOSSUM HUNNEWELLIANUM var. *MADOUXIANUM*.

ODONTOGLOSSUM LUTEO-PURPUREUM var. *MULUS*, sub var. *TENEBROSUM*.—Segments narrow, lanceolate, yellow, with a purplish-brown blotch extending over nearly the whole surface, and with white rays at the base; lip oblong, acuminate, whitish, purple-blotched.

ONCIDIUM NUBIGENUM (Lindley).—Segments oblong, obovate white, with a deep violet blotch; lip rounded, white, with purplish spots at the base.

SPATHOGLOTTIS AUREO-VIELARDI (Hort. Veitch).—Figured in *Gardeners' Chronicle*, 1898, i., fig. 115. Segments oblong, whitish, sprinkled with reddish dots; lip deeply three-lobed, lateral lobes spatulate, thickly bestrewn with red dots; anterior lobe hammer-shaped, deep red.

THE PRICE OF ORCHIDS.

"If we compare the present value of certain Orchids with the prices formerly asked for them, we are surprised at the great fluctuations noticeable during the latter half of the present century. Casting a retrospective glance down the lists of prices formerly obtained at public auctions in London, it is observable, that for a few francs, certain species can now be had that formerly were worth their weight in gold. On the other hand, it may also be said that Orchids which were once to be bought for a moderate sum, have to-day reached

a comparatively exorbitant value in the cases of such species as have not been found again in, or imported afresh from, their original habitat.

The sales by public auction in London, held, since 1830, in Covent Garden, and more recently in Cheapside, have caused more than one fine collection to be dispersed, and have thus enabled horticulturists as well as private growers to obtain large quantities of imported Orchids. The species mentioned in the following list, were formerly valued at the prices named:—

In 1830: *Sobralia macrantha*, 650 francs; *Laelia superbiens*, 376 fr.; *Barkeria spectabilis*, 425 fr. In 1846: *Renanthera* (*Vanda*) *Lowii*, 750 fr.; *Angraecum eburneum*, 494 fr.; *Vanda suavis*, 430 fr. In 1853: *Epidendrum Frederici-Guilielmi*, 420 fr.; *Phalaenopsis grandiflora*, 390 fr. In 1855: *Erises Schrodærae*, 2,225 fr.; *Vanda suavis*, 780 fr.; *Erises affine*, 650 fr.; *Oncidium Lancanum*, 405 fr.; *Vanda Batemani*, 1,080 fr.; *Erises nobile*, 530 fr.; *Saccolabium ampullaceum*, 380 fr. In 1859: at the sale of the first specimen of *Phalaenopsis amabilis*, which the traveller Fortune had bought in the Philippine Islands for a dollar, the Duke of Devonshire paid 1,710 fr. In 1861: *Saccolabium guttatum*, 1,300 francs; *S. giganteum*, 1,200 fr.; *Laelia anceps alba*, 1,150 fr. In 1869: *Cypripedium Stonei*, 975 fr.; *Oncidium splendidum*, 1,175 fr.; and *Masdevallia Lindeni*, 876 fr." *Otto Bullif*, in the "*Dictionnaire Iconographique*."

FOREIGN CORRESPONDENCE.

TRANSPARENT APPLES.

I CANNOT answer the question as put in your number for November 3, p. 131, as I do not know any transparent "Crab," but I should like to say a few words about "A. D.'s" remarks, p. 342. There certainly is translucency in Apples; and a good many sorts, especially early ones, shows it here in Sweden, and the more so the farther north they are grown. Still it is not unknown in Germany. In the *Handbuch der Obstkunde* (Pomolayi, by Jahn Lucas & Oberdieck), it is said about White Astrakan (quite different from White Transparent): "flesh snow-white, very fine, juicy, and with a fine acidity. When fully ripe the core is quite full of juice, and the translucency begins there, and commonly on the side next the sun, it sometimes becomes so intense that the seeds may be seen when the fruit is held against the light. Such glassy fruits are particularly valued, and are called transparent." Here it is not only White Astrakan is transparent, it is commonly so, but it is necessary to let it remain on the trees as long as possible, in fact it is always eaten from the tree and never gathered. I had to learn that from my employer when I came to Sweden from Denmark some twenty years ago. I hardly knew transparency then. It would be interesting to know if transparency is unknown in England; here it is the rule in the north, and in Germany it is most prevalent in the highlands. I have found it in Irish Peach too, and sometimes in Gladstone, but it is not so marked in any sort as in White Astrakan. Transparency is not equally valued everywhere. Director R. Goethe, in his new book on *Obst und Traubenzucht*, says that "White Astrakan must be gathered before it is quite ripe, or it becomes glassy." *M. P. Andersen, Jönköping, Sweden.*

WINTER TREATMENT OF CACTI AND SUCCULENTS.

For fifteen years I have been occupied with the cultivation of Cacti and succulents. I do not agree with those who consider it desirable to keep Cacti and succulents entirely dry during the resting season, that is to say, from October to March. I know, by experience, that such treatment is always injurious to the plants, as when they are kept without water it is a positive fact that all their roots dry up entirely, so that when the fine weather

returns it is some time before the plants form new roots; hence is induced a considerable check to growth, as before these new roots can draw nutriment from the compost in which the plants are set, they must have attained a certain degree of development. On the contrary, those plants of which the roots have been kept fresh, begin to move on the first fine day, and so facilitate the development of flower-buds, which are formed in spring.

Cacti sufficiently large to produce flowers bloom each year, without exception, with me; if perchance one fails to do so, I carefully examine the roots, when nine times out of ten it is these that are defective. As your correspondent, "Anti-desiccator," appears to have but poor success with the flowering, I advise him to try my plan, as by so doing I can assure him that he will get blooms in future if his Cacti have not hitherto borne them.

This is my general rule for wintering Cacti and succulents; but it is necessary to separate them into two groups.

I put water into the pots every eight or ten days in the case of *Cereus*, *Echinocactus*, *Echinocereus*, *Echinopsis*, *Leuchtenbergia*, *Mammillaria*, *Opuntia*, *Pelecypora*, *Pilocereus*, *Agave*, *Aloe*, *Gasteria*, *Haworthia*, *Mesembryanthemum*, and *Stapelia*. I choose, by preference, a clear day, when there is some sun, and I administer sufficient water to thoroughly moisten the roots. Unlike "Anti-desiccator," I do not water them overhead, and I avoid as much as possible wetting the plants, as water remaining on the vegetation is prejudicial to it. I keep the plants in a cool temperate-house, at from 8° to 10° C. [46° to 50° F.]. *Euphorbias* prefer rather more heat, and the same amount of moisture, to keep them in health.

Phyllocacti, *Epiphyllum*, and, above all, *Rhipsalis*, need watering more frequently, and a thorough syringing of the plants is much to be recommended. A temperate-house at from 10° to 12° C. [50° to 53° F.] is necessary for them. For those grown in rooms, and kept at a higher temperature, more frequent watering is advisable, because such plants are deprived of the air of a greenhouse, which is always more or less damp.

It is essential that each receptacle or pot be well-drained, that the potting-compost be light, and the bottom of the pot be covered with bits of broken pot, laid concave-side down, so that the surplus water can get away. *Frantz De Laet, Contich-lez-Anvers.*

FLORISTS' FLOWERS.

THE QUESTION OF CHRYSANTHEMUM "SPORTS."

CULTIVATORS should give careful attention to any chance sport that may be noticed on a portion of a plant of good variety. Although the origin or the cause of sports is still as obscure as ever (see *Gardeners' Chronicle*, December 18, 1897, p. 432. Ed.), there is one point that should be borne in mind, that any sport coming from a sterling variety like *Phœbus* as a Japanese, or *Charles Curtis* as an incurved, is sure to bear a close, or I might say identical, resemblance to its parent in habit of growth, and in all points except colour. The same rule will not apply to varieties raised from seed of known varieties, though occasionally seedlings also possess a habit very nearly the same as their parents.

A few years since sports were quite common among incurveds and Japanese varieties, and they furnished the bulk of the best of older varieties. Nowadays one is seldom heard of, and why, I know not, though one reason suggests itself to me, and is as follows: The present fashion of growing Chrysanthemums for the production of large blooms is not favourable for increasing the number of new varieties by sports, the side shoots being removed as they grow, and it is from such side shoots that the largest number of sports have appeared.

The following are hints as to the best means of

fixing sports, and of obtaining a stock of plants from them: If one branch only produces the strange bloom, cut away all other branches, and remove the dead bloom from the "sport," but not the leaves. Turn the plant out of the pot, and lay it on its side in a propagating-house or frame which has bottom-heat, and cover the roots and branches with cocoa-nut fibre, burying the buds in the axils of the leaves, but not the leaves themselves. This will induce the plant to produce a shoot at each joint, and when these are long enough, they should

a quantity of growths at the base of each plant, which may in turn be used for propagating purposes. Some growers propagate from the stems, cutting them into lengths, but these do not strike freely, and comparatively a small number of plants can be raised in this manner.

It is also advisable to strike all cuttings growing from the base of the plant, carefully marking them, as some of these may produce flowers like to the sport.

In some instances, what are known as root-sports

parts of the country. In each case the sport is a facsimile of the other.

Taking the Japanese section first, I find no fewer than thirty sterling varieties have been obtained from this source. Of course, there may be many more, but this number pretty well exhausts the list of prominent varieties. Those following are a few of the more prominent:—

Madame Carnot, white, introduced by Calvat in 1894, has given us G. J. Waner, yellow, and Mrs. W. Mease, primrose colour d.



FIG. 125.—*CYPRIPEDIUM INSIGNE CHANTINI LINDL.* (SEE P. 409)

be removed with a sharp knife, not cutting them too low, as that might prevent other young growths springing from the base. Insert the cuttings singly in small pots, using sandy soil, and place in a propagating-case with bottom heat. Attend carefully to the watering and shading of them, as these cuttings will be more tender than ordinary ones, owing to their having been forced into growth. Plants which have been thus established may be expected to produce flowers of the new variety and

are obtained. This means that all the sucker-growth from the base will belong to the new variety, presuming, of course, that the plant was allowed to grow with one stem only.

As showing how interesting this question of "sporting" is, and what excellent varieties have originated therefrom, I have jotted down the names of a few of them. It is a curious point, too, that it sometimes happens that the same variety will give an identical sport simultaneously in several

Vivian Morel, silky mauve, sent on by Lacroix, first produced Charles Davis, rosy-bronze colour, in 1893; then Lady Hanham, golden rosy cerise, as well as Mrs. Ritson and Robert Laird, both white-flowered forms of the original.

Mutual Friend, white, was introduced by Mann in 1893, and in 1898 gave us a pure yellow variety.

Mons. Chenon de Leché, rose, is one of M. Calvat's sterling novelties of 1895. This variety produced a pale yellow sport last year, which

received the name of *Souvenir de Marchioness Salisbury*.

Mrs. C. H. Payne, bright rose and white, is one of Calvat's 1892 raising, and has excited much comment by its coarse, ungainly character. It has, however, been most productive of sports, no fewer than four having originated from it. Perhaps the latest of these known as *M. Louis Remy*, pure yellow, is the most valuable, possessing as it does, so little of the roughness of petal of the original, and reminding one much of *Phœbus*.

Among incurved varieties there are numerous records of "sporting" over a very long period; as far back as 1856 we have the first recorded sport of any value as an exhibition flower, *Alfred Salter*, a sport from *Queen of England*, which was introduced by *Salter* nine years previously.

The "Queens," as they are termed, have been more prolific in sports than any other section or type. No fewer than seven valuable varieties have emanated from this source. Such sterling varieties as *Empress of India*, *Golden Queen of England*, *Lord Alcester*, and *John Doughty*, are the result of sports from the original *Queen of England*. The *Princess of Wales* family has also afforded many sports, as many as six having appeared since the original was introduced in 1864. *Princess Teck* was an introduction by *Pethers* in 1868, and in 1873 gave the sport known as *Hero of Stoke Newington*, which was followed by *Mrs. Norman Davis* in 1886. During the year following there appeared no fewer than three sterling varieties: *Lord Eversley*, white; *Charles Gibson*, deep bronze red, centre cinnamon-fawn; and *Lady Dorothy*, pale cinnamon-buff, suffused with rose.

Novelty, *Prince Alfred*, *Jeanne d'Arc*, *Lady Hardinge*, and *Robert Petfield*, have all given useful additions to this section.

Sporting is not confined to the incurved and Japanese sections only, all types, even the single-flowered varieties have been largely increased in this way.

In but three instances have I known sports to exhibit any variation in the formation of flower from that of its parent. These are the reflexed *Mrs. Horse*, from a true incurved *George Glenny*; an incurved variety, *George Bradner*, from the reflexed variety *Mrs. Forsythe*; and *M. Louis Remy*, which has petals much flatter than the type. In the two former instances the colour is preserved. *E. Molyneux*.

SEEDLING CHRYSANTHEMUMS AT GREENLANDS, HENLEY-ON-THAMES.

A visitor to the gardens of *Greenlands*, the residence of the Hon. F. D. Smith, is sure to find something of interest at any season of the year. Just now the *Chrysanthemum* specialist would find something to engage his attention, as *Mr. Perkins* is, and has been for some years past a very successful raiser of seedling varieties. *Mr. Perkins'* seedlings are all raised from seeds of his own saving, and there are now to be seen in one of the houses a number of plants prepared for seed-saving by having the florets clipped hard back, the plants standing near some warm pipes in an airy house. A warm and dry atmosphere is essential to the development of pollen and the prevention of damping; a considerable amount of care has thus to be bestowed on these plants while seeding, although the result is often disappointing, the crop of perfect seeds being a very small one. All these drawbacks have to be contended with by the *Chrysanthemum* hybridiser at home, and if he can obtain for his trouble one or two good varieties of some distinct colour he will have reaped some reward for his labour. *Mr. Perkins* has been fortunate in this respect, for this year he has from about 500 plants raised from seedlings obtained several Awards of Merit and First-class Certificates; on one occasion, I believe, three Awards for as many varieties, from the Royal Horticultural Society. The collection of *Chrysanthemums* here is not entirely free from the dreaded rust, but some of *Mr. Perkins'* seedlings are rust-proof, although standing among infected

plants, and this applies to some grown on from cuttings of last year's seedlings, as well as those now flowering for the first time, and if a race can be produced of disease-resisters, a decided advantage will have been attained. Some of these seedlings were past their best at the time of my visit. Among those still good I noticed a very fine, slightly incurved Japanese (*G. Lawrence*), shaded bronze colour. A bloom of this was staged in a collection at the Maidenhead show, and had a prize been offered for the premier flower, no doubt it would have gained the award. As two good blooms only were produced, it could not be set up for a certificate this year. *Nellie Perkins* is a large pale lilac, with lighter centre; *Master E. Seymour*, an incurved Japanese of large dimensions, colour bright red, with coppery-yellow reverse; *Earl of Arran*, large yellow; *Mrs. J. Bryant*, large rosy-purple, silvery reverse; *Lady Esther*, a pure white and very refined flower. All the above have received awards this season except the first-named. *W. F. Holt Beever*, a large peach-pink flower, was entirely free from rust, as was also a large golden Japanese incurved seedling from a *Carnot* cross; both had been free from disease this and the preceding year. *Edith Perkins* was a flower of the *Viscountess Hambledon* type, but much improved; while a seedling from *Mrs. W. H. Lees*, a refined flower and larger than the parent, of the purest white, flowers from late buds also of the same pure colour—this would no doubt prove a very useful decorative variety. One or two very good seedling incurved varieties were found in *Mrs. H. Jones*, a pure white; *Little Lil*, a large flower of a pleasing pink shade; and *Mrs. Beever*, peach, with silvery reverse.

Other noticeable subjects at *Greenlands* just now in the extensive ranges of glass comprise a house of *Calanthes*, chiefly of the *Veitchi* and *Vestita rubra* varieties; while *Cattleyas* and *Cypripediums* were strongly in evidence. Another house is filled with *Anthuriums*, including many interesting home-raised seedlings. Several ranges of small span-roofed houses are devoted to decorative plants for house and table decoration, both stove and greenhouse including quantities of *Crotons* and *Dracenas*, *Primulas*, *Cinerarias*, *Cyclamens*, and immense quantities of forcing material, bulbous and otherwise, was coming on for winter and spring use, and *Lilies* of the Valley flowering from retarded crowns made up in pyramidal cones of moss for special positions in rooms. *Mr. Perkins* can claim the honour of being the first to have adopted the retarding system for *Lily* of the Valley crowns, now some fourteen or fifteen years ago, by using an icehouse for the purpose, and thereby producing a supply of late flowers for a table decoration on a special occasion, which created a considerable comment at the time, and from which the extensive trade in retarded subjects as now carried on may be said to have originated.

Strawberry forcing is also a special feature at *Greenlands*, and some 7,000 plants, in excellent condition, are plunged outside for this purpose; while in one of the houses I noticed a few fruits of the variety *St. Joseph* still hanging, and was informed this had been used extensively for an autumnal supply. *C. H.*

THE HERBACEOUS BORDER.

ERYSIMUM PULCHELLUM.

ERYSIMUMS are not popular plants, and are found in but few gardens, for they are weedy things, scarcely suitable for planting in select gardens. Recently, however, there were to be observed in bloom on the rockwork edgings, several nice plants of the small-growing *Erysimum pulchellum*, an attractive plant about which a few words may be written in its favour. The plant is more attractive perhaps, when it blooms in the autumn than the spring, for then its yellow flowers nestle close to the foliage, instead of being elevated

as in the spring. Even in spring, despite this defect, it has proved itself a useful plant in my garden, growing without renewal for some twelve years. It is not, however, so hardy everywhere. The soil in which my plants are growing is light and dry, and they form masses one foot or more across, and would grow larger were they not cut back to prevent encroachment upon other plants. The plant forms a compact mass of small, rather glossy-looking foliage; and from this arise in spring a number of stems from 6 to 9 inches high, bearing several, clear yellow, wallflower-like flowers. *Erysimum pulchellum* is easily raised from seed with ordinary treatment; and it produces seed freely. The species is a native of Asia Minor, and is best known by the name here used, although it is now authoritatively named *E. rupestre*.

LYTHRUM ALATUM.

There are said to be some twenty-three species of *Lythrum* in existence, of which a few only are in cultivation. The native *L. Salicaria*, whose variety named *superbum*, is really a handsome plant, particularly by the sides of ponds or streams where its requirements in the way of moisture are amply supplied. *Lythrum alatum*, the winged Loose-Strife, is a much scarcer plant. Its appearance depends upon the nature of the soil in which it grows, inasmuch as its height varies from 1 to 4 feet, according to poverty or richness, and the quantity of moisture it receives; it is of a half-shrubby character, and produces its beautiful purple flowers in the axils of the upper leaves. The leaves are acute at the apex, and rounded or cordate at the base. The stems are angled or slightly winged, as the specific name given it by *Pursh* implies. It is rather widely distributed in the United States, and in a portion of southern Ontario. We are also told of a more southerly, or, perhaps more correctly, a related form, named *L. lanceolatum*, which differs slightly in the form of the leaves. *L. alatum* was introduced about 1812; it will grow in almost any kind of soil.

ANEMONE RIVULARIS.

It is remarkable that one sees so little of this member of a genus which gives us so many beautiful flowers; not that it is so great a favourite as the Wood Anemones, or, the varieties of *A. japonica*. It will grow less than a foot high in poor soil, and it is possible to have it nearly 5 feet high in a rich border. Under the latter conditions it is too coarse to afford any idea of its attractions when dwarfer and smaller in all its parts. The flowers are pretty, with their purple anthers contrasting well with the white of the sepals. The villous leaves are three-parted. It is a plant for the sides of a stream more than for the border, and in the wild garden. It comes from North India, but is hardy with us in Scotland.

HELONIAS BULLATA.

The "Swamp Pink" of its native regions is not so often observed in this country considering the length of time that has elapsed since it was introduced in 1758. A native of bogs, it is hopeless to attempt to make it thrive satisfactorily in an ordinary border. The true place for *Helonias bullata* in the garden is in an artificial bog, by the side of a pond, or in a low, wet place at the foot of a rockery where the drainage from the surface find its way. Some recommend that it should have a shady position, but this is only an imperfect way to make up for deficiencies of moisture; where a swampy place can be obtained for it, it does not object to the full sun. I have a lively recollection of a mass of this Swamp Pink in a northern garden making a most effective sight with its stout stems surmounted by their racemes of densely set pink flowers with bluish anthers. It was an unusually vigorous plant, and was growing on the banks of a pond in peaty earth. It is perfectly hardy. Its flowering time in this country is in early summer, and, as it produces its racemes well above its radical leaves, it has a good effect. It is increased by division after flowering. *S. Arnott*.

POLLEN GRAINS.

Few people even amongst the most ardent lovers of flowers are aware of the beautiful structure of those minute grains of pollen which form the fertilising bodies of all flowers. Every species of plant has its own particular type of beauty, and in many cases the charm of brilliant colour is superadded to that of ornate design. To appreciate these

with every added power, and very often, when her structures appear rough and irregular, they only need to be investigated to be found of infinite internal delicacy.

Walk round the garden, then, or visit the conservatory, gather the pollen from a dozen or so of different species of flowers, scatter each kind separately upon a glass slip, and put it under, say, a half-inch power lens of an ordinary microscope,

decoration strikes the reflective observer as extraordinary and superfluous, the difference in size alone being naturally accounted for by the need for larger grains for the longer stigmas. Here, however, as in innumerable other cases, Nature lavishes beauty upon her creations without the slightest deference to man's opinions, and there is just as little doubt that the prehuman world was replete with loveliness as that at this present

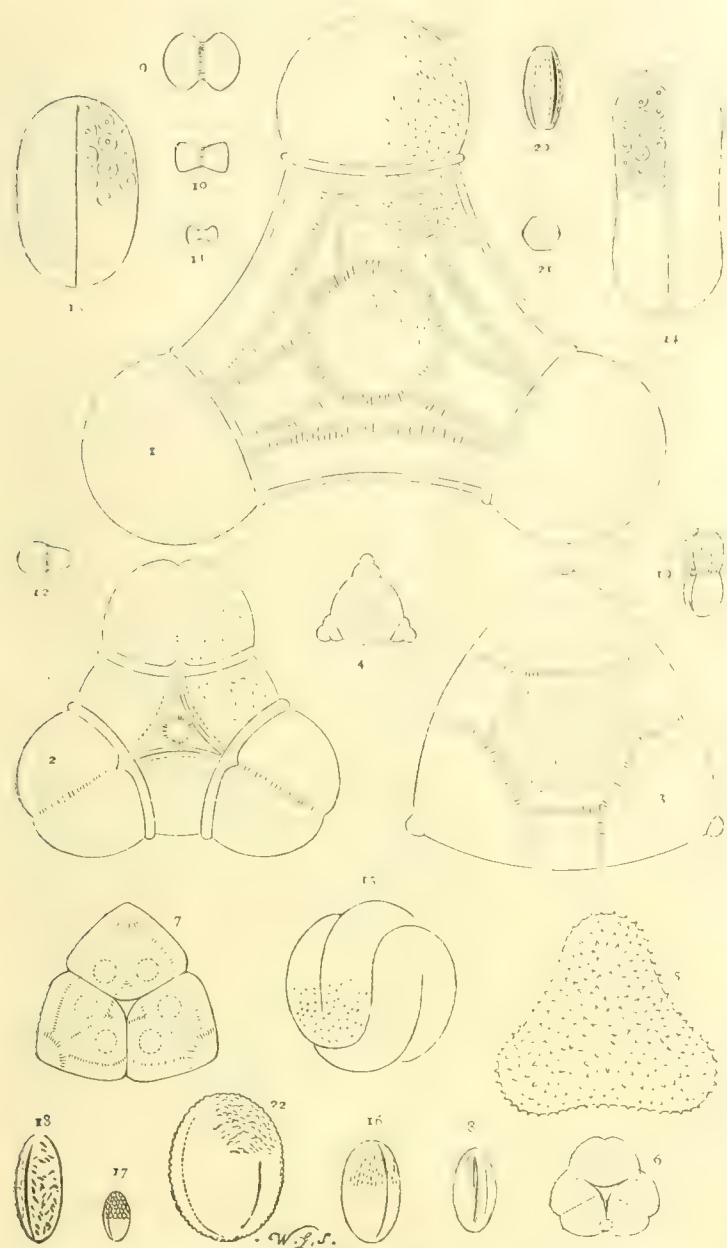


FIG. 126.—POLLEN GRAINS. (MAGNIFIED 400 DIAMETERS.)

- | | |
|-----------------------------------|---|
| 1 <i>Oenothera macrocarpa</i> | 12 <i>Echium vulgare</i> |
| 2 <i>Godetia Whitneyi</i> | 13 <i>Libonia floribunda</i> |
| 3 <i>Clarkia pulchella</i> | 14 <i>Sericographis Ghiesbreghtiana</i> |
| 4 <i>Cicrea alpina</i> | 15 <i>Thunbergia Harrii</i> |
| 5 <i>Lonicera Periclymenum</i> | 16 <i>Mimulus moschatus</i> |
| 6 <i>Erica Tetralix</i> | 17 <i>Colceolaria Pavonii</i> |
| 7 <i>Rhododendron Catawbiense</i> | 18 <i>Digitalis purpurea</i> |
| 8 <i>Clethra arborea</i> | 19 <i>Antirrhinum majus</i> |
| 9 <i>Symphytum officinale</i> | 20 <i>Mercurialis annua</i> |
| 10 <i>Cerintho bicolor</i> | 21 <i>Xylophylla glaucescens</i> |
| 11 <i>Onthalodes limifolia</i> | 22 <i>Codium pictum</i> |

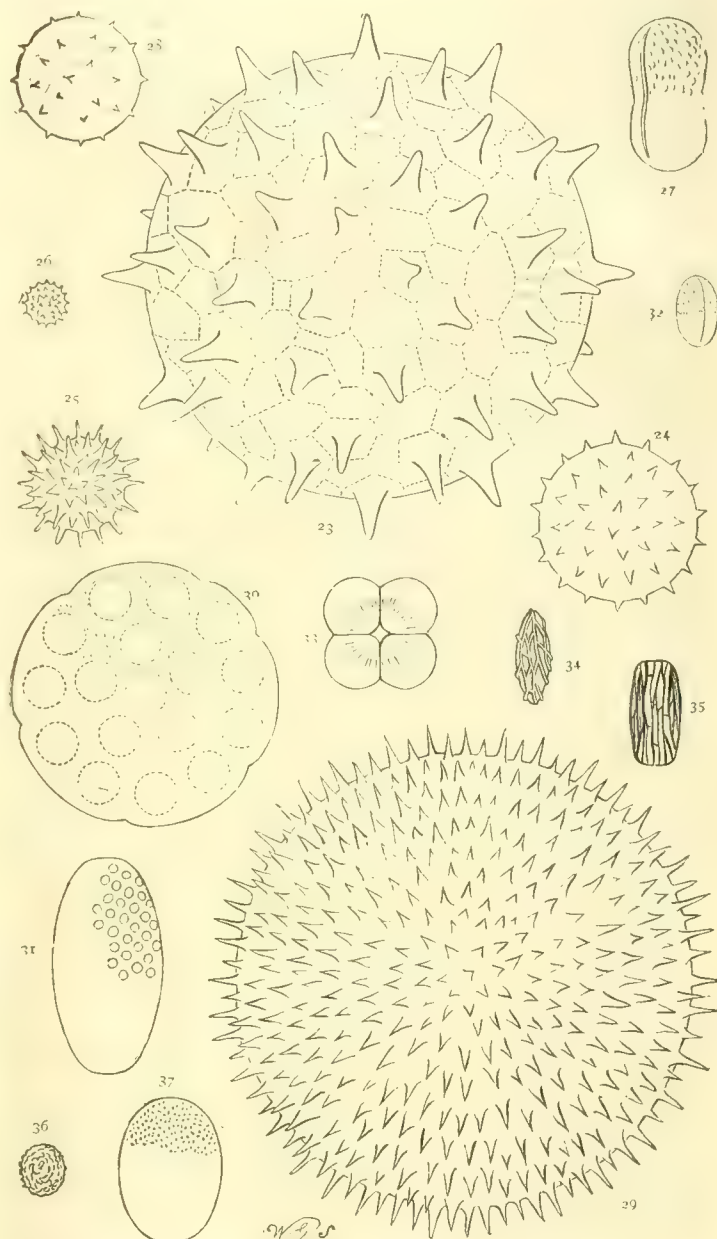


FIG. 127.—POLLEN GRAINS. (MAGNIFIED 400 DIAMETERS.)

- | | |
|----------------------------------|--|
| 23 <i>Hibiscus rosa-sinensis</i> | 31 <i>Convolvulus arvensis</i> |
| 24 <i>Abutilon Darwini</i> | 32 <i>Cuscuta trifolii</i> |
| 25 <i>Dahlia Cavendishii</i> | 33 <i>Phyllotænum mirabile</i> |
| 26 <i>Erigeron canadensis</i> | 34 <i>Anthurium Patinii</i> |
| 27 <i>Centaurea cyanus</i> | 35 <i>Spathiphyllum heliconiaefolium</i> |
| 28 <i>Campanula Medium</i> | 36 <i>Anthurium Scherzerianum</i> |
| 29 <i>Ipomœa purpurea</i> | 37 <i>Richardia albo-maculata</i> |
| 30 <i>Convolvulus Soldanella</i> | |

beauties no very high magnifying power is required; a good Coddington lens suffices in many cases, such as in the Lily tribe, where the grains are sufficiently large to be plainly visible to the unaided eye. Like most natural structures, however, the more they are magnified the greater the detail. Nature's handiwork differs in this respect materially from man's, since his daintiest creatures are seen to be rough and crude in detail when highly magnified, while those of Nature gain in charm

and it will be a curiously non-receptive mind that has not found a splendid evening's amusement, combined with instruction.

Considering that the office of every grain in every flower is identical, and that it is simply a receptacle for a cell and two nuclei, one vegetative, one reproductive, and sufficient material to enable a tube to be formed for the conveyance of the nuclei to the ovary through the substance of the stigma, the diversity of shape and colour and surface

moment the microscopist alone is acquainted with by far the major part of the lovely structures of to-day.

It is, however, beneath the surface that the chief marvels of the pollen grains exist. Within every one of them there lie the potencies of the entire species, enshrined in that microscopic fertilising cell to which we have alluded. Born of the other cells of the flower, this one has been prepared for the particular purpose which is the end and

aim of plant-life, viz., reproduction; it is not like the other cells, a complete one, capable of dividing and forming others independently, but is in some respects a half-cell, in which, however, are congregated the very essences of its kind. In another part of the same flower, or, maybe, in another one altogether, and perhaps on another plant, lies another, as it were, half-cell, also previously prepared and differentiated into an ovum or egg-cell, and likewise fraught with all the potencies of the race, but incapable of independent action. The pollen-grain, borne by the wind, or bee, or other agency, falls upon the stigma, and presently swells and protrudes a tiny tube, rooting, as it were, into the substance of the stigma, and in time it makes its way to the other half-cell, and the nucleus of the one unites with the nucleus of the other. The power of division common to most cells is restored, the conjoined potencies of both parents now work together, and a seed is eventually elaborated capable when perfected and sown of reproducing the species with all its peculiarities, i.e., provided that the pollen-cell and the ovum-cell are both of like origin. If, however, they be of unlike origin—that is, are derived from two different varieties, species, or even genera, a still greater marvel arises from their union, for in some inscrutable fashion the diverse potencies plan and carry out an original structural form of plants, in which their joint peculiarities appear in varying grades, often endowing the cultivator with entirely new types, and in addition bearing progeny of such extreme variability as to enable him to do almost what he likes with either foliage or blossom by careful and continuous selection. It is to such an alliance as this, in the first place, that we owe such lovely tribes of decorative plants as the tuberous Begonias, in all their wondrous variety.

Another marvel of the pollen-grains is their immense numbers. The smallest blossom has them in profusion; hundreds, and perhaps thousands, are created, only one of which has its mate provided for it—and yet we shall find every one perfect in form, and could any lens fathom the potencies within, we should undoubtedly find them all there, so lavish is Nature in her provision for the perpetuation of the race. And yet this profusion is graded in conformity with the chances of the pollen-grain finding the near or distant egg-cell. Wind-fertilised trees, such as the Conifers, may make the very air thick with their air-borne pollen, creating an apparent dust-storm in the very bosom of the humid forests. The self-fertilising flower, on the other hand, will bear the smallest crop of all; so that Nature's apparent waste, after all, is seen to be a sort of lavish insurance premium, paid to secure beyond all risk the main and vital objects of reproduction. Moreover, the superfluous pollen affords a rich supply of food to pollen-eating insects. *Chas. T. Druery, F.L.S., V.M.H.* [The illustrations, figs. 126 to 129, are from the pencil of Mr. W. G. Smith, who has paid great attention to the subject, and rarely omits to represent the pollen grain in the excellent drawings of new species with which he has enriched our columns.]

TREES AND SHRUBS.

THE FLOWERING CHERRIES.

(THE CERASUS GROUP OF THE GENUS PRUNUS.)

THE trees and shrubs belonging to the Cherry group, which are commonly known as species of *Cerasus*, form collectively the most beautiful of the half-dozen sections that make up the genus *Prunus*. When it is remembered that "*Prunus*" now comprises (besides *Cerasus*) the Peaches, Plums, Almonds, Apricots, Bird-Cherries, and Laurels so called, this is no small praise. Even in small gardens, where very few trees can be accommodated, no one can afford to be without one or more of the flowering Cherries. None of them, however, take up a very great amount of space, for even the largest can only be described as small trees. Others are

comparatively dwarf shrubs. In a wild state the Cherries are found exclusively in the cool temperate parts of the northern hemisphere, and they occur in all three of the northern continents. Now that the planting season is here, it may be worth while to recall to the memories of intending planters a few of the best of them. In all, there are about a score of species introduced, but quite half of these are not easily obtainable, or are possessed of no particular attractions. Those mentioned in the following notes are the best of those sold by nurserymen. Where there is room, all should be grown.

The "doubling" of the flowers of many plants is a questionable gain, but it is not so with the Cherries. The flowers last longer in beauty than the single ones do; and, perhaps because the "doubling" is not carried to excess, they have lost none of their grace by the process. Considering first the more tree-like species, the finest of all in beauty of flower is, in my opinion—

P. PSEUDOCERASUS.

This and its various forms are known under several other names, and it may probably have to be obtained as *Cerasus Watereri*, *C. Sieboldi rubra*, or *C. Lannesiana*. See fig. 99, p. 609, *Gardeners' Chronicle*, May 17, 1890, and fig. 79, p. 517, *Gardeners' Chronicle*, April 25, 1896. It is a native of China, but it is mainly from Japan (where it has been cultivated for centuries), that it has been introduced to this country. It says, indeed, much for its beauty, that it is one of the greatest favourites of the flower-loving people of that empire. The opening of its blossoms marks one of the national festivals of Japan. It is only in recent times that the single-flowered typical plant has been introduced. What we mainly cultivate are the double-flowered forms which are greatly superior, and which are the result of centuries of cultivation by the Japanese. In nearly all of these the flowers are of a lovely shade of rosy-white, pendent, and from 1½ inch to 2 inches across. They are borne in graceful clusters, and during early April wreath the branches (then leafless) from end to end. Few trees are so unfailing, or so abundant in their flower production as this Cherry. During the last few years, several varieties have been imported from Japan under native names. A variety secured by Messrs. Veitch, and called "James H. Veitch," is, perhaps, the finest tinted of all, the flowers being 2 inches across, and deep pink. The variety known as *Cerasus Watereri* is also a very fine one. A curious and striking variety, fl.-pl. luteo, has flowers of a yellowish-green tinge.

P. SERRULATA.

Very nearly allied to the above comes this Cherry, also of Chinese origin. It has similar double flowers, produced in equal profusion; they are also white tinged with rose. But the habit of the tree is different—it does not seem likely to grow so tall, having a strong propensity to send out its branches horizontally rather than upwards; it is, perhaps, the most picturesque-looking of the Cherries. An old specimen at Kew, about 15 feet high, is a most beautiful object every year in April. Further distinctions between it and the previous species may be found in its flowering a week or two later, and by the leaves being quite smooth. Nor are the flowers ever so deeply tinted as in the better forms of *P. pseudocerasus*.

P. AVIUM (THE GEAN).

The wild species of this name is a native of Britain, and is a pretty tree. I remember, twenty years ago (and probably now), it made a very pretty feature every spring in the woods that clothe the slopes round Belvoir Castle. For the garden proper, however, the double form (*P. avium flore-pleno* or *P. avium multiplex*), is much to be preferred. It is a fine tree 30 feet high, of clean erect growth, but with the pure white flowers pendulous on the branches. It is equal to

either of the preceding Chinese species in its wealth of blossom, and rarely, if ever, fails. There are several other varieties, a pendulous one perhaps being the most noteworthy.

P. CERASUS (CERASUS VULGARIS).

Like *P. avium*, this is a native of Britain, and it is to its double-flowered varieties that it owes its value in gardens. One of the best of these is known as *Rhexii flore-pleno*, a charming small tree, bearing in May a profusion of pure white flowers, gracefully pendent on long stalks. This species, and *P. avium*, both of which are the parents of the fruiting Cherries of gardens, are frequently confounded. *P. cerasus* is a smaller tree, often no more than a shrub, and it has shining, smooth, short-stalked leaves, with rounded teeth. *P. avium*, on the other hand, has more or less pubescent long-stalked leaves, with sharp, pointed teeth. These characters will serve to distinguish them, for the flowers—especially in the double forms—are very similar. The fruit of the typical *P. cerasus* is acid, that of *P. avium* never so, but either sweet or bitter.

P. ACIDA VAR. SEMPERFLORENS.

This is a remarkable variety of the European *Prunus acida*. It commences to flower in April or May, and continues to do so till September. It is one of the very few trees that in this country may be seen bearing flowers and fruits simultaneously. Added to its continuous blossoming, it has the charm of a very graceful pendulous habit. It is usually worked as a standard, and forms quite a small tree 6 feet to 10 feet high; its flowers are pure white, rather small compared with some other Cherries, and its leaves are small, dark green, and rather leathery in texture. There are other varieties, but this is the only one that need be included in a selection of the best Cherries. It may have to be obtained under the name *Cerasus semperflorens*.

P. PENDULA.

Under the name of *Cerasus pendula rosea*, this singularly beautiful Cherry may now be obtained from most nurserymen dealing in trees and shrubs. The pendulous habit is characteristic of the species, and is quite as marked in specimens raised from seed as in the plants that are worked in nurseries. In mild seasons it flowers towards the end of March, but more usually in April. The flowers are not large but freely borne, and of a very pretty rose colour. The species has been introduced from Japan, and is often used there (so Sargent says), in the adornment of old temple gardens. It is quite distinct from any other Cherry mentioned in these notes. Its nearest ally appears to be *P. subhirtella*, a new species from Japan, introduced to Kew a few years ago, but still very rare.

P. JAPONICA (CERASUS JAPONICA, FL.-PL.).

Of the shrubby Cherries, this is, on the whole, the finest, almost rivalling in beauty the double-flowered *Prunus triloba*, which belongs, however, to the Apricot section of the genus. It is naturally of low, very bushy habit, and produces slender twigs, which, the following spring, are laden with white or rose-coloured flowers. These flowers are very "double," and 1 inch to 1½ inch across. The shrub attains its greatest perfection against a sunny wall, where it flowers, as a rule, early in April. In the open, also, it is a delightful plant, flowering rather later there. When grown on a wall, it is necessary to prune it hard back once a year, and this should be done as soon as ever the flowers are over, so as to give as long a season of growth as possible. In the open ground, pruning is not absolutely necessary; but even there the plants may be spurred back with advantage, especially if it is desirable to keep them as low as possible. The stools then send up during the season a crop of shoots 2 feet to 3 feet long, which the following spring are wreathed with blossoms from top to bottom. The loveliest form of this shrub (a native of China) is the one sold as *Cerasus japonica roseo flore-pleno*.

P. CHAMÆRERASUS.

A dwarf shrub, with small, narrow, shining leaves, and clusters of white blossoms, appearing early in May. It grows naturally some 3 feet to 4 feet high, and is of neat, close habit; but, as a rule, is grafted on standards. It then forms a small, mop-headed tree, and has a rather pendulous habit.

P. PROSTRATA (MOUNTAIN CHERRY).

I am afraid it is not at present very easy to obtain this delightful little shrub, certainly one of the most distinct of the Cherry group. Were its beauties as well known as they ought to be, a demand would no doubt spring up for it that would create the supply. It was introduced in 1802, and

leaves, $\frac{1}{2}$ inch to $1\frac{1}{2}$ inch long, and its flowers, crowded close to the branches on very short stalks, are of a lovely shade of bright rose, and $\frac{1}{2}$ inch to $\frac{3}{4}$ inch across. Flowering as it does with great freedom, it may be used in sunny positions on the rockery, where there is room for it to spread out 3 feet or 4 feet in width.

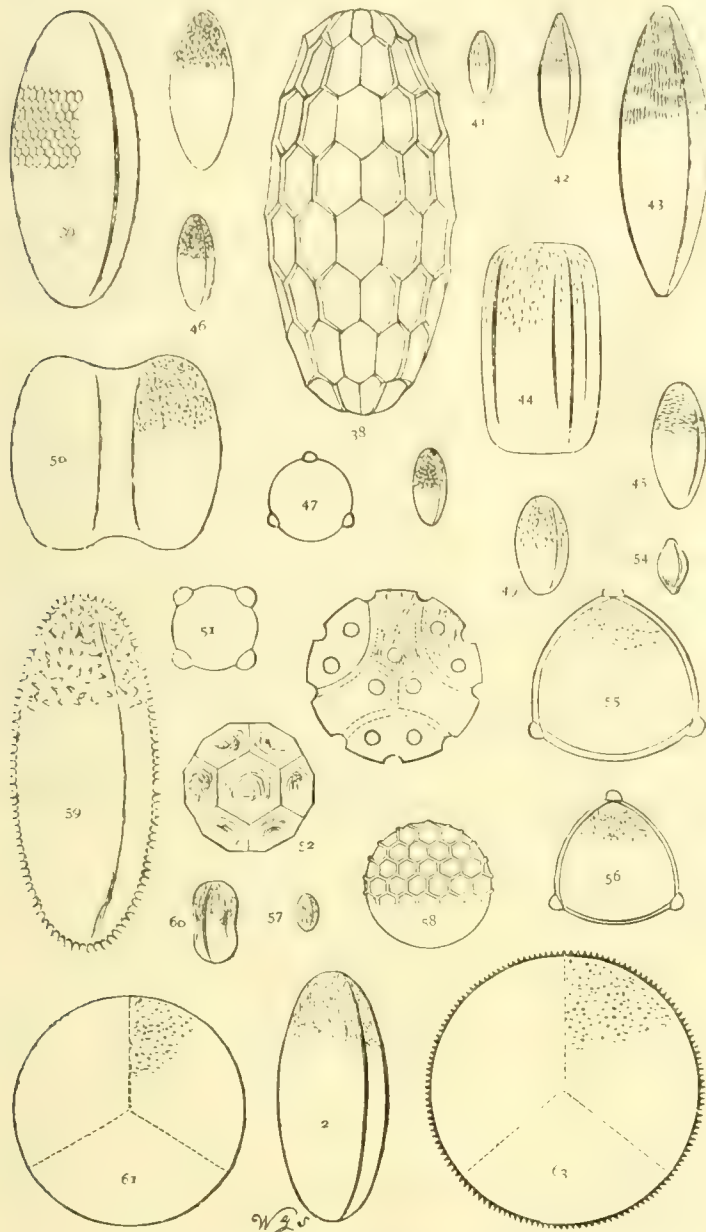


FIG. 128.—POLLEN GRAINS. (MAGNIFIED 400 DIAMETERS.)
(SEE P. 413.)

- | | |
|--------------------------------------|-----------------------------------|
| 38 <i>Lilium longiflorum</i> | 51 <i>Echeveria secunda</i> |
| 39 " <i>californicum</i> | 52 <i>Thamnocalamus Falconeri</i> |
| 40 <i>Aloe abyssinica</i> | 53 <i>Passiflora coelestina</i> |
| 41 <i>Narthecium ossifragum</i> | 54 <i>Urtica urens</i> |
| 42 <i>Convallaria majalis</i> | 55 <i>Cucumis Melo</i> |
| 43 <i>Fritillaria imperialis</i> | 56 " <i>sativus</i> |
| 44 <i>Viola tricolor</i> | 57 <i>Solanum dulcamara</i> |
| 45 " <i>odorata</i> | 58 <i>Phlox decussata</i> |
| 46 <i>Adoxa moschatellina</i> | 59 <i>Crinum pratense</i> |
| 47 <i>Symphoricarpos parviflorus</i> | 60 <i>Galanthus nivalis</i> |
| 48 <i>Sambucus nigra</i> | 61 <i>Iris iberica</i> |
| 49 <i>Saxifraga umbrosa</i> | 62 " <i>Kemperi</i> |
| 50 <i>Cedrus Libani</i> | 63 <i>Crocus aureus</i> |

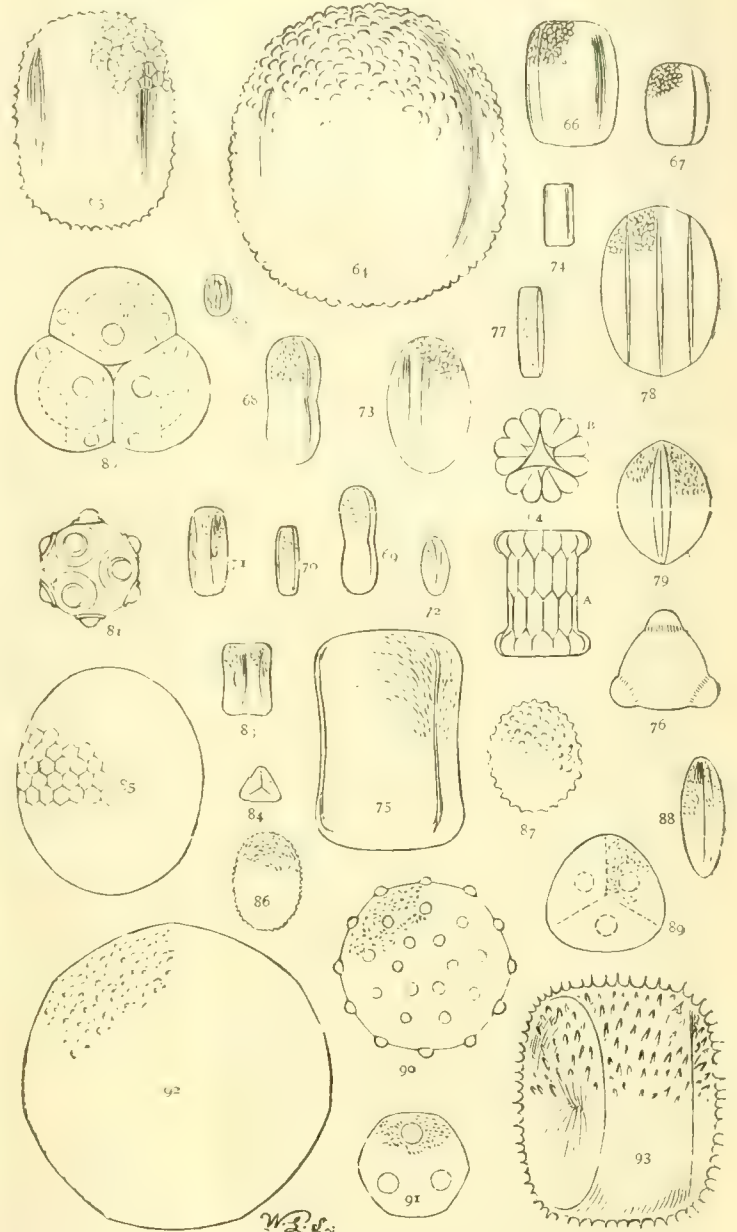


FIG. 129.—POLLEN GRAINS. (MAGNIFIED 400 DIAMETERS.)
(SEE P. 413.)

- | | |
|-----------------------------------|--|
| 64 <i>Geranium sanguineum</i> | 80 <i>Epacris hyacinthiflora</i> |
| 65 <i>Pelargonium zonale</i> | 81 <i>Fumaria officinalis</i> |
| 66 <i>Oxalis acetosella</i> | 82 <i>Primula viscosa</i> |
| 67 <i>Tropaeolum majus</i> | 83 " <i>veris</i> |
| 68 <i>Heracleum sphondylium</i> | 84 " <i>denticulata</i> |
| 69 <i>Ananthe crocata</i> | 85 <i>Armeria maritima</i> |
| 70 <i>Sium angustifolium</i> | 86 <i>Ilex aquifolium</i> |
| 71 <i>Hydrocotyle bonariensis</i> | 87 <i>Nymphaea alba</i> |
| 72 " <i>nitidula</i> | 88 <i>Papaver Rhoeas</i> |
| 73 <i>Hedera helix</i> | 89 <i>Tilia europea</i> |
| 74 <i>Lotus corniculatus</i> | 90 <i>Agrostemma Githago</i> |
| 75 <i>Cytisus Laburnum</i> | 91 <i>Dianthus barbatus</i> |
| 76 <i>Erythrina crista-galli</i> | 92 <i>Opuntia polyantha</i> |
| 77 <i>Nepeta violacea</i> | 93 <i>Dipsacus sylvestris</i> |
| 78 <i>Salvia patens</i> | 94A <i>Polygala vulgaris</i> (side view) |
| 79 <i>Scutellaria Mocciniana</i> | 94B " " (seen from top) |

There is a variety, however, known as *pendula*, whose branches are more strictly weeping. The species, which occurs in various parts of Europe, is grown sometimes as *Cerasus fruticans*. It is not, of course, one of the very showiest of the Cherries, but still a pretty and desirable plant.

was correctly described by Loudon in his tree and shrub books sixty years ago. It comes from the mountains of the Levant, where it grows at altitudes of 5,000 to 6,000 feet. Although a low shrub, 1 foot to 2 feet high, of spreading habit, it is not quite prostrate in cultivation. It has small ovate

There are other beautiful species in this section of *Prunus* not mentioned yet, such as *P. humilis*, and *P. Jacquemonti*, both shrubs from North Asia, with pink flowers (the former one of which bore its Cherry-like fruits at Kew this year); and *P. Puddum*, a tree from the Himalaya, with rosy

white flowers. But none of these is easily obtained. *P. pennsylvanica*, a small tree, and *P. pumila*, a shrub (both American), can be purchased, but they are not in the first rank. On the whole the selection of species and varieties given above may be taken as representative; where room can be provided, every one of them ought to be grown. *W. J. Bean, Kew.*

CULTURAL MEMORANDA.

PLANTING AND TRANSPLANTING KNIPHOFIAS.

THERE are people who will do anything for appearance sake regardless of results, and such as these not infrequently in planting *Kniphofias* chop off every vestige of leafage. The chances are a hundred to one that all such plants perish during the winter. I offer this timely hint for the information of those who may know no better. Rather than suffer the foliage to lie on the ground around the plants, those who perform this species of gardening enormity, would rather the plants perish from the ingress of moisture during the winter months. This kind of mutilation is practised by the continental nurserymen, and has been copied here by unthinking persons. The best time to plant is March and the first weeks of April, and I would only plant in late autumn when circumstances compelled me to do so. *E. H. J.*

BEGONIA GLOIRE DE LORRAINE.

This is a very beautiful variety of winter-flowering *Begonia* for cultivation in pots and baskets. The flowers are a beautiful pink in colour, and form a nice contrast to the pale green foliage. The plant flowers in the months of October, November, and December. After flowering, afford them a short rest in an intermediate-house, or a dry corner in the Cattleya-house, no water being afforded. In February or March, cut the shoots back rather severely, and place the plants in a pit or house having a temperature of 75° to 80° by day, and 15° lesser by night. When new shoots appear, cuttings may be taken and struck in a mixture of loam, leaf-soil, Coconut-fibre, and silver sand. It is a good practice to place five cuttings in a 60, or singly in thumb-pots, afford water, and plant in a propagating-bed, keeping them close till rooted; after which the cuttings should be stopped. Pot them off singly when well rooted, the stronger ones into large 60's, and the others into the smaller size. Be careful in applying water, as too much will cause decay at the root. It is better not to afford water before the soil is quite dry; an occasional dewing overhead with the syringe is beneficial, and plenty of light should reach them. Repot when the roots have reached the sides of the pots. In order to have large specimens, the final repotting should be into large 24's. When planted in baskets, surround the latter with a thick lining of sphagnum-moss; and put out a plant that has been growing in a 32-sized pot, which is better than filling the basket with small plants. When a plant is shifted for the last time, and the soil is filled with roots, not before, apply weak manure-water obtained from the cow-stall. A rather dry atmosphere is more suitable for the plant when in bloom than a moist one. *J. E. Trimmingham.*

BOWHILL.

THIS seat of the Duke of Buccleuch and Queensberry is situated about 3 miles from Selkirk; and having recently paid my first visit to the place, a few notes taken at that time may be of interest to some of the readers of this journal. The mansion is old and of large proportions; the flower-garden which adjoins was renovated a few years ago by Mr. Lunt, and shows considerable artistic merit. The various designs are carried out in Box, which is kept in capital order; and some of the designs, such as scrolls, are filled in with coloured gravels and ashes. There is a great expanse of lawn and

of water. The kitchen-garden is about 2½ acres in extent, and has a good wall built of whinstone, and well covered with various kinds of fruits—Apple-trees doing particularly well. The garden was well cropped with winter vegetables, and afforded evidence of high cultivation. A fine herbaceous border runs through the garden, and at the time—early October—there was still a good display of flowers. Violets of many varieties are a feature of the place, and the climate seems suitable to them; large frames to the number of fifteen are filled with Violets each autumn, and afford continuous bloom. I saw several thousand plants of Violets growing on a border which were just fit for planting in the frame, and grand plants they were. Mr. Lunt makes a point of trying new varieties, but Marie Louise is still his favourite variety.

Another flower-garden adjoins the kitchen-garden, and here summer and spring bedding is extensively carried out. The arrangement of the beds is different to that usually seen, and suggests the idea of being thoroughly in keeping with the surroundings. Several beds were filled with *Polyanthus*, which were flowering freely; the various glasshouses are adjacent to this flower-garden. There are no fruit-houses, the family receiving its supply from the Duke's other gardens in Scotland; but there are some good plant-houses, consisting of a large stove containing a fine collection of *Codæums*, *Dracenas*, and *Palms*, and a fine batch of *Begonia Gloire de Lorraine* just showing flower. When this grand introduction came out a few years ago, gardeners had some difficulty in growing it, but now it is no longer a nurseryman's plant.

A fine lot of *Chrysanthemums* newly housed filled the adjoining house; many were showing fine blooms, and growing these favourite autumn flowers seems to run in the Lunt blood.

A house adjoining contained a collection of modern varieties of zonal *Pelargoniums* well grown and full of flower. In the frames outside a fine young batch were coming on to continue the succession. A corridor-house connects with the potting-shed, frames, &c., and was well filled with flowering *Begonias*, *Statice*, *Streptocarpus*, and zonal *Pelargoniums*, all in robust health. Mr. Lunt favours the *Primula*, and had, amongst others, a houseful of *P. stellata*. *Cineraria stellata* is also extensively grown, and serves a useful purpose.

Everything about Bowhill shows careful and skilful cultivation. A house for the gardener is now being built, which will be a model of its kind. *R. L.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Intractable Oncidium.—Species of *Oncidium* that have properly-developed pseudo-bulbs are more easily cultivated than those species which produce only rudimentary bulbs, or none at all. Plants of the latter description might be expected to need a supply of water at regular intervals throughout the year, but it is not so, and they are liable to much injury if the base becomes soddened, especially when, as at the present season, evaporation is slow. *O. Jonesianum* and *O. Cebolleti* have terete leaves, which serve the purpose of pseudo-bulbs, and soon show the ill effects if afforded too much water. The former species, owing to its habit, should be fixed to a bare board, or a piece of tree-fern stem, suspending this with the leaves downward in a light, warm position in the East Indian house. Almost sufficient moisture will be acquired at the present season from the atmosphere, but a slight sprinkling with water may be afforded the plants on bright mornings. *O. Cebolleti* grows erect, and may be planted in a pot in the usual manner, affording a large quantity of drainage material, and only a little peat and sphagnum-moss. This species also needs light and heat, and exceedingly little moisture at the roots at this season. Of quite a different nature are *O. Lanceanum* and *O. Cavendishianum*. These have practically no pseudo-bulbs, but broad, thick leaves, which store moisture. The first-named species produces flowers

of a fragrant and highly attractive nature, but is one of the most difficult to cultivate. A certain measure of success may be obtained by securing imported plants on bare teak-wood rafts, and suspending these in a warm, moist house. At the present season the lightest position will suit them, but in summer they will need partial shade. Afford but scanty waterings, and a very even temperature during winter. The second species is more easily managed, and requires but ordinary pot culture at the warm end of a Cattleya-house. It is just now in flower, and will, therefore, need little water until fresh roots are being made. *O. luridum*, *O. Lansbergi*, and *O. hæmatochilum* may be grown in small suspended baskets, with a very small quantity of moisture-holding material at the base, and be otherwise treated like *O. Lanceanum*. *O. papilio* and *O. Kramerianum*, the "Butterfly Orchids," are generally difficult to cultivate for any length of time. *O. papilio* succeeds best if secured to a bare block and suspended in the lightest and warmest part of an East Indian-house. Grown with ordinary stove plants, the block may be syringed several times a day during the summer, but now direct watering is seldom necessary. *O. Kramerianum*, being more compact in habit, may be grown in small perforated pans, containing plenty of drainage material and little peat and sphagnum-moss. When affording water at this season, only immerse the pan to the depth of the drainage, so as to prevent thorough saturation. *O. divaricatum* and *O. pulvinatum* are practically bulbless species with thin leaves. These may be planted in well-drained pans, and a small portion of peat and sphagnum-moss. Suspend the pans in a house where warm *Cypripediums* are growing, and during the summer months afford them an abundant supply of water. From the present date until spring a very limited quantity will suffice. *O. splendidum* puzzles the most skilful cultivator, owing to there being an insufficiency of light and heat during our long winters. The greatest measure of success is obtained by fixing the plants to a raft placed upright in a pan, a small quantity of peat and sphagnum-moss being inserted between the plant and the raft, also in the pan. Suspend or place these rafts in the hottest and lightest position obtainable, affording the plants a fair supply of water during their growing season, but from now onward none whatever should be afforded so long as the thick leaves remain firm.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Manure heaps.—Too often manure-heaps are so badly managed that much of their manurial properties are lost, and at this season it is good practice to turn them over and mix the contents, and place a thick layer of soil beneath the mass. This serves to augment the generally too scanty supply, the soil absorbs the liquid and more fertilising constituents of the heap. The larger the heap, and the firmer it is trodden together, the better it will be. Stable-manure needs to be turned over and damped occasionally to induce perfect decay; it is an excellent manure for stiff soils. Charred refuse should be used on vegetable plots, requiring but little fertilising dressing.

Future croppings.—The gardener having arranged his plants for next year's crops, will afford the land for each its special preparation. He must bear in mind that Carrots, Parsnips, and Beet, do better on land that has not been freshly manured. If land has been twice cropped, or will be occupied for two years in succession by the same kind of crop, manure should then be applied. Plots may be prepared for early Potatoes, afford but little strong manure, or the haulms will be unduly large, and the tubers proportionately small. The Onion crop is an important one, and the position of the quarter should be well drained and sunny. In order to save digging, it sometimes follows Celery, then trenching and manuring are unnecessary operations. If Onions follow any other vegetable, the land should be heavily manured and trenched, the surface being left in a rough state till March.

Parsley.—If roots were planted in cold frames in the month of October, expose them to steady rain for a few hours, but the lights should be placed on the frames before hard frost comes. Nothing does more harm than to let the plants be frozen, and then be exposed to rain. This can be clearly seen with the out-door Parsley, for if cold weather sets in immediately after a heavy rain, the abundant

foliage will be quite unfit for use in a few days. Out-of-doors Parsley, if in beds, may be covered with handlights or frames, after having denuded the plants of the coarser leaves. There is yet time to make another sowing on a mild hot-bed, spent Mushroom-bed manure being excellent for this purpose. Place a layer 9 inches thick of loam three-quarters, and a little leaf-mould one-quarter, or refuse from the potting-bench, and road grit, on the bed, and sow thinly in drills drawn 6 inches apart. The plants obtained from this sowing will afford very useful pluckings, and transplant well early in the spring.

Turnips.—If the second of the two sowings of Veitch's Red Globe or other variety have reached normal size, they should be stored, as rain and frost cause them to rot if left in the ground. The roots should be stacked in ridges, and covered lightly. The roots of Chirk Castle may remain in the ground till the spring, and have the soil drawn over them.

Chou de Burghley.—Before hard frosts arrive, let a quantity of the best plants be lifted, and planted rather close together on a sheltered border, or in any spare pit where some kind of protection can be given them.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Training wall trees.—If the directions given week by week respecting pruning have been followed, this part of the work will be in such a forward state, that some of the gardeners may now be set to the training of the trees. When fruit-trees are grown in cordon fashion, it is merely necessary to maintain the stems parallel, with an equal distance from each other. A fan-shaped tree, on the contrary, requires a certain amount of practical skill to finish it off in a workmanlike manner. It must be wholly or partly detached from the wall, if its branches are in need of being regulated, and be laid out anew in such a manner that they radiate at regular intervals all over the crown like the ribs of a fan. Having done this, the subsidiary branches may be secured, and finally the young shoots. These are the general directions necessary to be borne in mind in training any kind of wall tree. Branches and shoots should, of course, be trained out straightly, and if there be any deviation from this, it may be in slightly giving the main branches a downward inclination, but avoid resorting to unnatural means, such as attaching a strand at the ends. It is not of much consequence whether nails and shreds, or bast or raffia, and wires and stubs be used. The tying is perhaps to be preferred, because the material used affords less favourable hiding places for insects, but it takes a longer time to carry out. Use tarred string or wythes for the thick branches, and bast for all others. Be careful not to let nails, studs, or wire, press unduly on the bark, and to afford space in the fastenings for the wood to swell without being injured.

Peach-trees.—If the trees are entirely loosed from the wall, and secured temporarily to stakes stuck into the border, the work of training may be carried out at any convenient time between the present time and the end of the year. Before taking down a tree, remove all superfluous wood, and clean and dress the tree with an insecticide.

Apples and Pears.—These fruits are usually grown as horizontally trained trees on walls or espaliers, although on high walls, say 12 to 15 feet, fan-shaped trees cover the wall in the quickest time; and the method admits of easier regulation if a branch be lost, than the other method. Two varieties that are well adapted for walls are Ribston and Cox's Orange Pippin. These two varieties are prone to produce young shoots furnished with a bold fruit-bud at their tips, which should not be removed until they have borne fruit. If these shoots are objected to as being unsightly, they may be fastened as near to the main branch as possible. If very large high coloured fruits of Peasgood's Nonsuch are desired, a wall tree will produce them.

Miscellaneous.—The leaves having fallen from all trees, the quarters of the garden and the grass-land under fruit-trees, &c., should be raked clean, and the leaves and rubbish burnt forthwith. If there are many young trees to be trained, the required number of stakes should be got in readiness in bad weather.

THE FLOWER GARDEN.

By J. BEXBOW, Gardener to the Earl of Ilchester, Abbotshury Castle, Dorsetshire.

The Reserve Garden.—Plants which are being grown for filling flower-beds and borders should be cleared of decaying foliage and weeds, and then be topdressed with some finely-sifted soil, placing it close up to the collars of the plants, and making the earth firm about them by hand-pressure. In dealing with Saxifrages and other plants of dwarf growth, road grit or fine charcoal makes the best top-dressing. Let the beds of these plants, and alpenes generally, be weeded and hoed before affording a top-dressing of spent Mushroom-bed materials, leaf-mould, or cocoanut-fibre refuse. Before using the top dressing, apply a peck of soot to 1 cubic yard of the materials, and let it be well mixed with them. Put on the compost by means of a large basket or trug, covering the soil to the depth of 3 inches, and afterwards levelling with a fine-toothed rake. Herbaceous perennials which are small of growth and die down in the winter, such as *Physalis Franchetti*, may be completely covered. Illegible or decayed labels should be replaced with new ones.

The Herbaceous Perennial Border.—Prepare the land by trenching and manuring when new work is contemplated, but do not remove any but the strongest growers till February. Where the plants in a border have been planted two or three years, the ground may be dug between the plants, keeping a trench of such a width as will allow of a large quantity of manure and the weeds to be buried therein, and let the soil fall well towards each clump, thereby making sure that all roots are covered safely, and pulverise the refuse somewhat, the better to keep out frost. Borders which were made and planted last year will not need to be deeply dug, a coating of short manure and light forking over sufficing. Borders containing four to six-year-old plants should be re-planted at the right time, dividing and reducing the size of most of the plants that increase in size rapidly, and re-planting, not the exhausted centres, but the vigorous outside part. The more vigorous plants not required may be set aside for planting in the wild garden, or by the sides of woodland walks.

Bulbous Plants.—All roots of Dahlias, Tigridias, Gladiolus, tuberous-rooted Begonias, Marvel of Peru, and hybrid Montbretias, should now be dug up and stored in dry cellars or frost-proof sheds. Most of these roots are the better for being packed in single layers in some dry materials, as coarse sand, coal-ashes, &c.

Narcissus.—Planting must not be delayed any longer, or flowering will be unduly late; in some parts the leaves have begun to show above the ground. Borders in which there are established clumps of bulbs may be carefully hoed, and then dressed with short stable-dung; or nitrate of soda may be applied at the rate of 2 to 3 oz. per square yard.

PLANTS UNDER GLASS.

By T. EDWARDS, Plant Foreman, Royal Gardens, Frogmore.

The Rose-house.—Roses that are trained to the roof of this house will now be forming flower-buds, and if planted in an outside border, a covering of litter or bracken should be afforded the roots, and the exposed part of the stem be protected by hay bands. The stems of Noisettes and Teas are very sensitive to cold, and growth is easily checked by it. Ventilate the house freely whenever the weather is mild, observing great caution when cold winds are blowing; avoid sudden changes, which invariably cause mildew to attack the Roses, but maintain an uniform temperature, opening the top sashes slightly when the sun appears, affording more air if the state of the weather may demand it. Keep the pipes slightly warmed at all times, with a minimum night temperature of 55°; and fumigate on the first appearance of aphides.

Roses in pots should be plunged in coal ashes, the pots and stems being covered with them to the depth of 4 inches, and bracken loosely packed among the branches of Teas and tender varieties generally.

Lilium speciosum and its varieties.—Shake out and repot the bulbs in a compost consisting of equal parts of turfy loam and peat, to which silver-sand is added. If the loam is not particularly rich, some dried pounded cow-dung may be incorporated

with it, Lilies being exhausting plants. Place the bulbs about 3 inches below the surface, and make the soil firm with a rammer; single bulbs in 6-inch pots are most useful, or several in larger pots if specimen plants are required. Apply water through a rose water-can, and stand the pots on the floor of a cold pit, or on that of a frost proof shed. No more water will be necessary for some time, but they should not be allowed to become quite dry, or the bulbs kept out of the soil for any length of time.

Pelargonium peltatum (Ivy-leaved) may be potted in 48's, in which size they should stand to flower. As a potting soil two parts loam and one part well-decayed hot-bed manure will be suitable. Press the soil firmly with the fingers, and treat generally like the Cape Pelargoniums. Keep the plants close to the glass, afford abundance of air, and pinch out the points of the strong shoots, so as to induce bushiness. Mrs. Hawley is an improvement on the popular Souvenir de C. Turner, the colour a shade deeper, with larger trusses and flowers.

Violets in Pits.—Pick off all decayed leaves, and stir the surface of the soil. Keep a circulation of air by tilting the sashes at the top and bottom, removing them altogether for three or four hours when the day is sunny and mild, but during sharp frosts cover with mats at night in preference to using artificial heat.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Worksop.

The Early Peachery.—We find here that the flower-buds of the trees in the early houses are advancing, and will soon expand; a state of things due to the mild weather. This house should now be closed, and a regular temperature of 45° to 50° at night, and 55° by day, be maintained during mild weather, with a reduction of 1° to 2° during sharp frosty weather; with sun-heat the degree of warmth may rise to 65°, and gradually reducing it during the afternoon to 55° ere the house is closed. Open the ventilators when the temperature reaches 50°, and admit air freely at 55°. Be most careful to avoid a sudden fluctuation of temperature in the first weeks of forcing, as it may, if combined with dryness at the roots, cause buds to drop to a serious extent. Syringe the trees early in the morning and afternoon, and get them dry before nightfall. The paths and borders should be damped down several times daily, according to the state of the air, and the amount of ventilation afforded. Let the border be kept uniformly moist, and liquid-manure be applied to aged trees when the soil is dryish.

Succession-house.—Assuming the early-house is planted with early fruiting varieties of Peaches and Nectarines, the succession-house should contain later and finer ones, and it may then be closed almost at the same date as the earliest-house. Whilst the present mild weather lasts, artificial heat will not be required in this house for at the least a fortnight; but in the event of a change to frosty days and nights, a temperature of 40° to 45° will suffice. When the temperature rises to 50° afford air freely, and do not syringe the trees before fire-heat is applied, as to do this excites the wood-buds unduly at the expense of the flowers. In any houses where a large proportion of the roots are in outside borders, the latter should be covered to the depth of a foot with dry tree-leaves.

Late Peach-houses.—The buds on the trees are getting prominent, indicating that pruning and cleaning should be finished forthwith. Where it is possible to expose the trees by removing the sashes, this should be done, in order to retard the opening flowers. Complete transplanting before the end of the year, and let the soil be maintained in a moderately moist state.

Cucumbers.—To enable the plants to thrive at this season, no more fruit should be allowed to develop than will meet the demands of the establishment. Maintain a temperature of 70° to 75° during the day, and a minimum of 65° by night, with bottom-heat of 75° to 80°. Keep a moist atmosphere by frequently damping the paths and borders of the house. Afford frequent light surface dressings to the beds. The material for this purpose should be rich, light, and porous. Encourage young growth to extend more freely at this season than any other. Remove spent foliage, and keep the trellis furnished with young growth. Mix up a quantity of Oak-leaves and horse-dung in readiness for forming new hot-beds.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the **PUBLISHER.**

Letters for Publication, as well as specimens and plants for naming, should be addressed to the **EDITOR, 41, Wellington Street, Covent Garden, London.** Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY, DEC. 10.—Roses, Hardy and Ornamental Shrubs, Liliacs from Japan, Border Plants, &c., at Stevens' Rooms, 38, King Street, Covent Garden.

WEDNESDAY, DEC. 12.—Six cases of *Phalaenopsis grandiflora aurea*, at 3 o'clock. Also Roses, Shrubs, Palms, Bulbs, &c., from Japan, &c., at Messrs. Stevens' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—40.7°.

ACTUAL TEMPERATURES:—

LONDON.—December 5 (6 P.M.): Max. 58°; Min. 51°.
December 6—Dull, warm.

PROVINCES.—December 5 (6 P.M.): Max. 56°, East Counties; Min., 34°, Shetland.

Amateur Market-Gardeners. "QUITE a glut of Apples is experienced in Lincolnshire this year. Some growers have not made more than twopence and threepence per stone for the best class; and others who have sent supplies to market have been out of pocket after paying the cost of carriage and other expenses. Several people are 'graving' their Apples, like Potatoes or Mangolds, in the hope that by keeping them for a time they will get better prices later on. Stones of fallen fruit, worthless to gather for sale purposes, have been allowed to lie on the ground and rot."

The above appeared lately in a London daily, and is but one of the numerous complaints of the season now come to a close, that fruit-growing in England does not pay, for the reason that when a good crop is actually realised, anything approaching a remunerative price for it cannot be obtained. It will be readily admitted that certain fruits, flowers, and vegetables of superior quality can be, and are, grown in England which at times find a ready sale at good prices at Covent Garden and other leading markets of the kingdom. Why, then, it may reasonably be asked, do we so frequently hear the complaints of native growers that at other times they cannot dispose of their produce at any price? The answer is contained in the fact that our growers have hitherto failed in sending to our markets a continuous and abundant supply of first-class produce from January to December.

It is apparent to the visitor at Covent Garden that a considerable percentage of the produce displayed for sale is of inferior instead of first-

rate quality. Until this state of things is altered, it is futile to hope that we shall ever stem the tide of foreign horticultural produce, which flood the great markets and towns of Great Britain.

Reasons without number have been offered for the non-production of home-grown produce of superior quality sufficient to supply our markets all the year round, such as high rates of transit, faulty land tenure, cost of manure, difficulty in obtaining land at reasonable rates, &c. These doubtless constitute drawbacks of a more or less serious nature, but do not go to the root of the evil. The problem to be solved is this: how is it that so much English-grown produce of an inferior quality appears in our markets, compelling the public to fall back on what is best of the foreign stuff which flows into our markets, while at the same time so many acres are under cultivation as market gardens, and so many thousands of glass-houses exist for the growth of the more tender kinds of fruit and flowers, which it has been proved beyond dispute can be and are grown in our climate of a superior quality to any the importer can supply.

Cost of conveyance and the other things already named undoubtedly handicap the native grower to some extent, but the absence of skill and of proper horticultural training on the part of some of our market gardeners is one cause of the mischief, and a potent factor in frustrating all attempts at lessening foreign importations. Those who are most conversant with the workings of the present-day system of market gardening in England, cannot but be struck with the fact that this so-called system is in an unsatisfactory state. It is not often that a person untrained in the arts of bricklaying and carpentering takes unto himself the duty of building a mansion, unaided by outside skill; and yet how common it is to see a man, suddenly perhaps, put into possession of the necessary funds, but without the trained knowledge absolutely necessary for the successful prosecution of such work, plunge blindly into the occupation of market gardening, refusing to adopt, even when solicited to do so, the advice of those best capable of giving it, with the inevitable result of frequently recurring disappointments and ultimate collapse.

It is remarkable how, at one period of our lives at least, so many of us imagine that we are born gardeners, and not only capable of looking after the Cabbages in our own back gardens, but also of undertaking the successful management of any market establishment in the kingdom? Is it because of the fact that we are all descendants of the head-gardener ADAM, and believe we have, or ought to have, an inborn insight into all the mysteries and difficulties of horticulture? Be that as it may, it is only too true that many of us, smitten with the almost universal love for the cultivation of the soil, "rush in where angels fear to tread."

He who embarks upon market gardening for profit with any hope of success should either be himself in full possession of the necessary experience and training for such work, or leave the matter of working to capable subordinates. Under these conditions, and these alone, can the extension of our market gardening industry be advocated.

To a man beginning business as a market gardener, total ignorance is less disadvantageous than a smattering of knowledge gained by the cultivation of his own back garden, provided always that he is prepared to rely upon the practical and scientific knowledge

of others until such time as he has gained the necessary experience for himself.

Another very prevalent idea amongst present-day growers for market is, that the man who reads and studies horticultural literature can be of little use as a practical grower for market; and that gardening books and periodicals are only written for private gardeners, and are of no earthly value to the grower for profit.

They even go further than this, and declare that any fool can grow this, that, and the other, forgetting that the little knowledge they possess has been transmitted to them from thoughtful and studious private cultivators, whose experiences and instructions, had they been strictly adhered to by our latter-day slipshod growers for market, a very different state of things would have obtained to that now so much in evidence. "Good enough for market," and "Anything will sell at Covent Garden," sayings so common now, should never be heard; so long as they are uttered and believed in, so long will the foreigner continue to laugh at our folly.

What is the real meaning of the expression "a grand market variety" which we see in many plant and seed catalogues? Does it mean that the variety in question is of superlative quality for beauty or flavour? Or is it on account of its easy culture and abundant cropping habit? The latter qualities, it is to be feared, but too often represent, on the part of the vendor, the real meaning of the hackneyed phrase. If this be so, then our nurserymen, seedsmen, and florists are indirectly to blame for keeping on a level the quality of our produce for market, instead of assisting and encouraging the grower in the cultivation of things of the choicest quality only, irrespective of the cost and trouble of their production.

Of course, it is not supposed that all our market-growers are slipshod producers, sending for sale anything and everything they can lay hands on, and then grumble when their vans return home with perhaps three-parts of what they desired to sell to a too-confiding public. On the contrary, we have in our midst many careful and thoughtful growers whose grounds are models of horticultural effort; but these men are not in sufficient evidence to rule and regulate our markets to the extent of keeping out the importer of such goods as can be as well produced in our own country, to the advantage of all concerned.

In support of the statement that, on the part of a number of our growers for market, there exists a surprising degree of ignorance of their trade, combined with prejudice and unwillingness to take advantage of the skill of others, one instance may be mentioned. A grower made the remark that although he had been growing Cucumbers for some years, he could not say that he had ever been very successful. This gentleman was in possession of ample means, and the owner of some half-a-dozen acres of the best land in West Sussex, on which were erected numerous well-built glasshouses for the cultivation of Cucumbers, Tomatoes, &c., and yet his cultural system was, generally speaking, diametrically opposed to all the teachings of experience and good gardening. He had had no horticultural training, and, moreover, was impatient of good advice when offered, and even when asked for. The reason of his want of success in Cucumber-growing was obvious to anyone with any proper knowledge of the subject. Whilst preparing his heaps of compost intended for Cucumber-growing, he discarded the "top-spit" of soil

in favour of that below to the depth of 4 to 7 feet, which was generally used in the district for brick-making. When asked "Do you not prefer the top soil to this cold, stiff, clayey sub-stratum for your purpose?" His reply was, "Oh, dear, no! I am not so much in love with the 'top-spit' as some people." In addition to this, he added in sandwich fashion, crude, rank, and offensive manure fresh from London, and made use of the mixture within three weeks of its preparation for the making of his Cucumber-beds and inserting his young plants; this, he freely admitted, was his usual custom in his attempts at Cucumber-cultivation. To such men, all attempts to instruct in true cultural art is lost. Doggedly they continue to have their own way, and stick to their own opinions, with the results above described.

Notwithstanding all our discoveries in botanical knowledge, and experiences in the art of horticulture, to be told that such a state of things actually obtains in England, a country above all others which, with her capital and intelligence, ought to be able to hold its own against all comers, is almost past belief. The present state of our horticultural produce markets demonstrates that capital without skill is useless in bringing about a better state of affairs; and skill, when disconnected from capital, is too frequently under-estimated. Is there, then, it may be asked, a way out of the difficulty—a way to insure our markets being served with a continuous supply of produce of such quality as will compel the foreigner to find "fresh fields and pastures new?" The answer to this question is in the affirmative, and as we may show on another occasion.

OUR ALMANAC.—According to our usual practice we shall shortly issue a *Gardeners' Chronicle* Almanac for the year 1901. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical, and allied Societies, or any of our correspondents, will send us immediate intimation of all fixtures for the coming year.

THE BANANA-HOUSE AT PADDOCKHURST.—In our last issue we gave a supplementary illustration of a waterfall and streamlet in the gardens of Sir WEETMAN PEARSON, Bart., M.P., and a description of the garden in its present renovated aspect. Our Supplement in the present issue shows a house of Bananas, containing eight plants of *Musa Cavendishi*, the species commonly cultivated in this country, although it is greatly exceeded in sweetness and delicacy of flavour by others, chiefly smaller-fruited ones. Given plenty of space, stove-heat, abundance of manure, and half-a-dozen plants, it is an easy matter to have one or two plants in fruit every year.

THE TRADE POISONS BILL.—A third and final meeting of the Chemical Trade Section of the London Chamber of Commerce was held on Tuesday afternoon this week to consider the above Bill (which has been formulated by the traders in poisons and poisonous compounds for the Technical and Trade Purposes Protection Society, of 5, Clement's Inn, London, W.C.), which has for its object the alteration and amendment of the law relating to the sale of poisons and poisonous compounds for agricultural and other trade purposes in Great Britain and Ireland, and to decide what action, if any, should be taken by the chemical trade section in the matter. There was a very full attendance of members and others interested, and after considerable discussion the following resolution was proposed by Mr. THOMAS BENNETT (Messrs. BENNETT LAWES & COMPANY, Limited), and seconded by Mr. J. J. BOWLEY (Messrs. F. BOWLEY & SONS):—"That the Chemical Trade

Section recommend the Council of the Chamber of Commerce to actively support in Parliament the proposed Bill to alter and amend the law relating to the sale of Poisons and Poisonous Compounds used for agricultural and other trade purposes." The resolution was carried.

THE BOROUGH COUNCIL OF FULHAM.—We learn from a correspondent that Mr. J. WALBORN, proprietor of the Cedars Nursery, West Kensington and High St., Putney, has been returned to the new Borough Council of Fulham. He was returned at the head of the poll, as was the case in a previous contest, and was once returned unopposed. This is a good record. This event seems to be peculiarly appropriate, seeing the once high repute in which the Fulham nurseries and market gardens were held in bygone years.

ROSES IN CANADA.—The *Saturday Globe* of the 20th October has a long and illustrated article on the Rose Nurseries of Mr. Dale, at Brampton. The houses number 27, with a glass area of 225,000 square feet. The houses are heated by steam. The furnaces are fed automatically, the coal being removed from the store and conveyed gradually to the furnaces night and day without the aid of workmen; the ashes are removed in like manner. The ventilators of the houses are also opened or shut automatically according to the temperature of the house. Two of the houses erected this year are each 840 feet in length. The soil of the Rose-beds is renewed every year. Propagation is effected by grafting on stocks obtained from Ireland. The Roses are planted out at all seasons, thus ensuring flowers at any time of the year. The newest variety is Liberty, imported from Ireland (? Messrs. DICKSONS), which surpasses Meteor in being fragrant. One house, 600 feet long, is devoted to this one Rose. Other Roses in demand are Bride, Bridesmaid, American Beauty, and Sunset.

"NICHOLSON'S DICTIONARY OF GARDENING."—We have often had occasion to speak in favourable terms of the French edition of this valuable work, prepared by M. Mottet. We now learn that the Société Nationale d'Horticulture de France has awarded to M. Mottet the prize of £100 founded by M. Joubert de l'Hyberderie. We are very much afraid no such *douceur* fell to the lot of the compiler of the original work.

MASDEVALLIA DEORSA.—In alluding to this plant in our last issue, we omitted to mention that the plant first bloomed in the Royal Gardens, Glasnevin, under the charge of Mr. F. Moore. It was exhibited at the Drill Hall by Mr. Moore. It is supposed that the plants possessed by Sir Trevor Lawrence and by the Glasnevin Garden are the only specimens in Europe.

ORANGES FROM THE ANTIPODES.—This being just the time of year when news concerning a fresh source of supply of Oranges will be most widely acceptable, we are glad to note that the South Australian export trade in Oranges may be regarded as almost past the experimental stage. The home market has been tested for the last three years, and Australian growers have found that not only can the lovely fruit be carried safely, but also that good prices for the same can be realised, provided that the fruit is landed at the right time. An idea of the demand existing in the United Kingdom for the fruit, may be easily gathered from the fact that the imports last year amounted to 8,553,713 bushels. The trade from South Australia was opened in 1897, when several thousand cases were exported; in 1898, owing to short crop, the total was only about 500 cases; and last year, 1,600 cases. We wish the enterprise every possible success.

MANURES FOR CHRYSANTHEMUMS.—The *Revue de l'Horticulture Belge*, for the present month, has a detailed record of the results of a series of experiments carried out on a sufficiently large scale, and with all due precautions. The results of the various trials, as shown in the superior vigour of the plants, and the beauty and substance of the

flowers, are arranged in the following order: The Fierens plan is placed first as to results. Here the manure was mixed with the soil, and liquid manure was also used. Next in order came the plants in which no manure was mixed with the soil, but liquid manure was applied. M. CORDONNIER'S plan is placed next. In this case a special manure, the "Papillon," was used, but no liquid manure. M. TRUFFAUT'S fertiliser is based on the chemical analysis of the plant. His manure was applied to the soil, and also in the form of liquid. Then came the plants grown in soil mixed with manure, but without liquid manure; and lastly, and least satisfactory of all, the plants grown without any manure at all, either in the soil or in the water. The manure applied to the soil was a compost containing definite proportions of dried blood, bone meal, horn dust, dried meat, poudre de Ricin, sheep's dung, wood ashes, and liquid manure. At the time of potting, a little soot was put at the bottom of the pot, and the surface was sprinkled with guano. This was pretty strong food, but as it was the same in all cases it did not invalidate the experiment. The liquid manure employed consisted of water, urine, cow-manure, soot, "colombine" guano, "radicelles" (? malt dust), sulphate of ammonia, and sulphate of iron. The manures remind us of the old days of polypharmacy, when doctor's prescriptions contained a dozen or more ingredients of a very miscellaneous character.

CEYLON.—Mr. A. G. TANSLEY, who studied botany at Cambridge, arrived on September 30 in Ceylon, to join Dr. LANG, who has been in this island two months, engaged in botanical investigations. They will continue at Peradeniya together until November or December, and then will start for the Malay States. Mr. TANSLEY will, during his six months in Ceylon, more especially study the lower forms of plant life.

M. VIGER.—In order to testify the gratitude of the Fellows to M. VIGER and to M. ABEL CHATENAY for the part they have taken in promoting the interests of horticulture at the late Paris Exhibition, it is proposed to invite those gentlemen to a banquet on January 17 next at the rooms of the National Horticultural Society of France, Rue de Grenelle, S. G., Paris.

THE CHAIRMANSHIP OF THE FRUIT COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY.—A resolution submitted to the Fruit Committee, with the Chairman's sanction, by Mr. ALEX. DEAN on Tuesday last, was in the following terms:—

"This Committee learns with profound regret of the resignation by Mr. Philip Crowley of the office of Chairman, which he has so long and so admirably filled, and hereby records its sense of the great loss sustained by such resignation. This Committee further desires to tender to him in his illness its sincere sympathy, and to express the earnest hope that under medical skill he may yet be restored to health, and once more occupy his former position at this table."

CATALOGUES WANTED.—The editor of *American Gardening* (son of Mr. BARRON, late of Chiswick), 136, Liberty Street, New York, U.S.A., would be glad to receive catalogues from English and continental plant dealers. Lists of florists' flowers, Roses, and herbaceous plants, are particularly requested.

REAFFORESTATION IN WALES URGED.—On Saturday afternoon, as we learn from the *Daily News* of Monday, December 3, an important and largely-attended conference was held at Conway to discuss the administration of crown lands and other crown property in North Wales. Mr. J. HERBERT LEWIS, M.P., presided, and in an interesting and weighty speech gave an account of existing crown property, and referred to most valuable property and rights which had been in the past jobbed away by successive administrations to reward political adherents or to secure political partisans. What was now complained of was, that the general policy of the department led it to treat local authorities representing the public with as much harshness and severity as it formerly treated

favoured individuals with reckless and prodigal generosity. Resolutions were passed asking that the right of pre-emption to foreshores should be given to the local authorities in whose districts such foreshores were situated, that local authorities should be more liberally treated in all matters relating to the acquisition of lands, &c., for the benefit of the public; that, in view of the great national benefit arising from the afforesting of waste lands, the government should enable the department of Woods and Forests to undertake this work upon an extensive scale; and that sworn surveys and maps of crown manors in North Wales be published, manor by manor, as parliamentary papers. It was decided to form an association to watch the administration of crown property, &c., to be constituted by the delegates of the local authorities summoned to the conference.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the Lecture Hall of the Institution on Monday, December 10, when a paper will be read by Mr. R. E. MIDDLETON (Fellow), entitled "The Future of the London Water Supply." The chair will be taken at 8 o'clock. Notice is also given that the next special certificate examinations in forestry and sanitary science will be held on Tuesday, Wednesday, and Thursday, June 11, 12, and 13. Particulars of these examinations can be obtained from the Secretary. The Institution library will be opened from 5.30 to 8 P.M. every week-day evening (Saturdays excepted) from October 1 to March 31, for the convenience of members and students of the Institution wishing to consult professional textbooks and other works.

LILIUM WALLICHIANUM.—Our correspondent, Mr. THOS. CRANWELL, of Mount Eden, Auckland, New Zealand, writes as follows: "In respect to the group of Lilies of which a full page illustration appears in the *Gardeners' Chronicle*, of July 7, 1900, I should like to remark that the flowers are not white, but honey-yellow, except towards the outer edge of the segments. In Mr. BAKER'S *Synopsis of all the known Lilies*, *L. Wallichianum* is described as having "large white flowers tinged with green on the outside of the segments." This description is not applicable to my Lily, which is honey-yellow in the tube, and the outside is tinged with reddish-brown. When Mr. PETER BARR called here the Lilies were in flower, and being doubtful of the correct name, I asked him if it was *L. Wallichianum*? He replied that it was. I think, therefore, there must be two distinct varieties. The bulbs are firm, somewhat pointed, and of a reddish-brown colour. After cultivating this Lily for some nine years, there has been no increase at the roots, but propagation only by means of the stem-bulbils, which are freely produced, and require from four to five years to reach flowering size. Last year, however, I got three pods of seed, and about nine little plants are now up. I may add, that like *L. auratum*, the bulbs deteriorate unless moved into new ground about every three years. My experience is however limited to the north of New Zealand, and to light volcanic soil."

ARTIFICIAL CROSSING OF PISUM SATIVUM.—According to E. TSCHERMAK, the common garden Pea is always self-pollinated within the closed corolla, and is very rarely visited by insects. The number and weight of the seeds is in no way influenced by the mode of pollination of the ovule, whether from pollen from the same flower, from a different flower of the same individual, from a different individual of the same variety, or from a different variety. Double pollination of a pure variety by its own pollen, or by that of the same variety and by pollen of another variety, or by pollen of two different varieties, is efficacious as regards both pollens; the one kind of pollen does not in any way interfere with the potency of the other kind.—*Bot. Centralblatt*, 83, 84; and *Pharmaceutical Journal*, Nov. 17.

THE CLOSE WALKS AT COWDRAY.—Mr. BOURDILLON calls attention in a recent number of the *Times* "to a danger threatening a very curious and beautiful bit of ancient pleasure-ground, the famous 'Close Walks' at Cowdray, in Sussex. The Midhurst District Council are, it appears, in seriousness negotiating with the present owners of this historic property, with a view to converting these most interesting walks into an arrangement of sewage tanks. Mrs. ROUNDELL, in her valuable and scarce work on *Cowdray*, calls particular attention to the 'Close Walks' as probably unique in England, and as many of your readers are, no doubt unacquainted with them, I quote her description:—

"The Close Walks were formed by four narrow avenues of fine old Yews, planted at right angles so as to form a square. This square measured about 150 yards each way. In the centre were circles, also of Yews. From the size of the Yew-trees, and the arrangement of the Close Walks, this portion of the ground was most remarkable. It was here that Queen ELIZABETH dined at the table four-and-twenty yards long." (*ROUNDALL'S Cowdray*, p. 124.)

There is not, so far as I can learn, the least necessity for selecting this particular spot for sewage tanks, and indeed it is in many respects unsuitable, being near habitations, and too sheltered to be properly ventilated. A great effort is being made locally to stay the negotiations before it is too late; but it seems to me a just occasion for invoking the interference of outside public opinion by means of your columns."

DUTHIE PUBLIC PARK, ABERDEEN.—A granite obelisk, with an allegorical figure of "Victory," in bronze on the top, has been erected in this park to the memory of the officers, non-commissioned officers, and men, of the 1st Battalion Gordon Highlanders, who perished whilst on active service in India from January, 1892, to November, 1898. The unveiling ceremony took place on Saturday afternoon, December 1.

CLEMATIS GREWIAEFLORA.—Mr. BURBIDGE writes: "I am sending for your inspection flowering branchlets of this rare winter-blooming species from the north of India, whence, according to NICHOLSON, it was introduced in 1868. These specimens came from Mr. ANDREW PORTER, head gardener at Woodlawn, co. Galway, who has had it for four years, during which time it has flowered twice, and this year most profusely. Mr. PORTER kindly informs me that the plant he has is planted, after due preparation, in a stable-yard at Woodlawn, and in a very hard, dense, gravelly soil. I believe Mr. THOS. SMITH, of Newry, raised the plant from Indian seeds, and sent it to Woodlawn, where it has thriven so well in the open air. So far as I know, we have four species of the green-flowered autumn and winter-blooming Clematis, viz., *C. graveolens*, September and October; *C. grewiaeflora*, October and November; *C. cirrosa*, October to December; and *C. calycina*, which flowers from January to March, or even earlier and later, as possibly also do the others named. On opening Mr. PORTER'S box of specimens of *C. grewiaeflora*, the first general effect of the leafy branches and flowers reminded me of a cluster of clean and finely-coloured Hops (*Humulus lupulus*), but the flowers are brighter, though described as being of a tawny yellow colour. The plant is figured in the *Botanical Magazine*, t. 6369, and deserves a trial in south and west Ireland, as also in Hampshire, Cornwall, and Devon, in gravelly soils, and of course in sheltered places near the sea. Judging by the ample specimens sent me by Mr. PORTER, this plant grows almost as vigorously, and flowers nearly as freely, as does our native *C. vitalba*, yclept 'The Traveller's Joy.'"

PUBLICATIONS RECEIVED.—From the U. S. Department of Agriculture, *Farmers' Bulletin*, No. 120: *The Principal Insects affecting the Tobacco Plant*. By L. O. Howard.—Division of Entomology, *Bulletin* No. 26: *Proceedings of the Twelfth Annual Meeting of the Association of Economic Entomologists*.—Circular No. 41: *Regulations of Foreign Governments regarding Importation of American Plants, Trees, and Fruits*.—Circular No. 42: *How to Control the San Jose Scale*.—*The Western Weekly News* (Christmas Number). Full of seasonable tales and other reading.

THE WEATHER IN WEST HERTS.

ANOTHER unseasonably warm week. The night temperatures were unusually high, and during the night of the 3rd the exposed thermometer never fell lower than 46°—a singularly high reading for the time of year. Notwithstanding the sunless character of the week, the soil temperature is now about 1° warmer at 2 feet deep, and about 4° warmer at 1 foot deep, than is seasonable. Some rain fell on each day, but on only two days did the amount deposited exceed a tenth of an inch. About 3 gallons of rain-water have come through the percolation gauge covered with short grass during the week. During the last six days the sun has shone for altogether only 1½ hour. The last day in November proved extremely calm, the average rate of movement of the air being less than a mile an hour. The air has been very damp; in fact, at three P.M., on five days, almost saturated with moisture. As some indication of the mildness of the present season, I may state that in my garden *Crocus Imperati longifolius* came into flower on the 25th ult., *Cydonia japonica* on a south fence on the 2nd inst., and *Petasites fragrans* on the 2nd inst.

NOVEMBER.

This proved a very warm November; the nights were, as a rule, comparatively warmer than the days, and particularly was this the case during the first and last gloomy weeks of the month. There were altogether only five nights which were in anyway unseasonably cold; on the coldest of these, the exposed thermometer indicated 12° of frost. This was the frost which killed my Dahlias, and but for which they would have been alive, and perhaps flowering at the present time. There were only eight days without rain, and yet the total measurement was only about average. During the month less than 5 gallons of rain-water came through the percolation-gauge covered with short grass, but 14 gallons through the bare soil gauge. The record of sunshine fell short of the average for the month by only about a quarter of an hour a day. The fact is, although the first and last weeks were very gloomy, yet in the middle of the month there were a good many days which were unusually sunny for the time of year. Only once before in the last fifteen years has there been so calm or so humid a November, and yet there were no fogs worth mentioning.

THE AUTUMN.

The past autumn, taken as a whole, must be regarded as having been an unusually warm, dry, and sunny season. *E. M., Berkhamsted, December 4.*

BOOK NOTICE.

LES ODONTOGLOSSUM.

UNDER this title, Monsieur L. Duval has produced a useful little book forming one of the series "Bibliothèque d'Horticulture et de Jardinage." Octave Doin, Paris. It is dedicated to Mr. Harry J. Veitch, to whose *Manual of Orchidaceous Plants* the author admits his indebtedness for the history of many of the species. As might be expected from the work of an expert cultivator of *Odontoglossum*, the cultural chapters are the best, all the important details being fully and intelligently dealt with. The work is rendered all the more interesting and useful by illustrations of most of the species and many of the hybrids, together with two pages of illustrations of the labellums of some of the species and hybrids, after the manner pursued by Messrs. Sander & Co., from whose establishment a very interesting set of *Odontoglossum* labellums, showing their usefulness as the chief means of identification, was submitted to us some years ago. At the end of the book a list of species and varieties, with complete information in columns against each, is given. In this list the author falls into the same error that one or two

other writers have fallen into before, viz., placing the hybrids of *O. crispum*, *O. luteo-purpureum*, and others as varieties of one of the species instrumental in producing them, some of the results of the same cross being placed as varieties of one of the species; and some, without any reason, placed under the other. Thus, *O. × Andersonianum* and other hybrids do not appear in the list at all, being left out along with the acknowledged varieties of *O. crispum*, the number being too great to include in the list; but practically the same things, such as *O. × baphicanthum*, *O. × hebraicum*, and *O. × deltoglossum*, appear as varieties of *O. odoratum*, the other parent. Under *O. luteo-purpureum*, *O. × Wilckeanum*, and other hybrids appear as varieties of the species, and so on with *O. Rossii* and others, notwithstanding the fact that it does not require much consideration to be able to conclude that plants which are derived from crossing two distinct species cannot be called varieties of either. If it were admissible to place a hybrid as a variety of one of the species from which it was derived, the question would be, Why one in preference to the other?

Every fresh work on any class of plants tends to further the interests of all concerned in them, especially when it is so well done as this little book by M. Leon Duval, which, apart from some little errors (principally printer's), is excellent.

NOVEMBER NOTES FROM THE SOUTH-WEST.

AUTUMN TINTS.—In the opening days of November, autumn's pageant of glowing tints attained its fullest perfection. Rarely in past seasons have the colours been so vivid or so simultaneously at their brightest. An abnormally wet June, followed by four months whose combined rainfall scarcely exceeded half the average fall for that period, doubtless aided in rendering the autumnal hues unusually brilliant; though in 1898, when, with the exception of a wet October, the weather was very similar, the tints were remarkably poor, the majority of the leaves falling without changing colour, the great Elms in the valley not yellowing until the first week in December, when three parts of their foliage had already disappeared.

The hanging woods that clothe the steep banks of the River Dart have been decked with suavely-harmonising colour, the crimson of the Wild Cherries, copper-red of Beech, blended orange, amber, and fawn of the Spanish Chestnut, pale saffron of the Elms, and tawny russet of the Oaks. In the hedgerows hang the wild Gueldres Rose's clusters of transparent fruit; the sombre, polished green of the Hollies is aglow with scarlet berries; around the confines of copse and spinney the coral-pink fruit of the Spindle-tree shines; the Hawthorn hedges are deeply flushed with red, a higher note of colour being here and there struck by the vermilion hews of the Dog-Rose or Sweet Briar, and the scarlet tangle of berried Bryony; while lofty tree and lowly bush are garlanded with the feathery, smoke-grey wreaths of the Traveller's Joy Clematis.

In the garden, also, autumn has celebrated her zenith with a fiery finger; the glowing tints of Maples and scarlet Oaks, and the golden sheen of the Tulip-tree are seen from afar; the long, pinnate leaves of the Stag's-horn Sumach (*Rhus typhina*) are scarlet and gold, and on the rounded foliage of the Venetian Sumach are displayed blended tints of green, saffron, and crimson. The snowy *Mespilus*, *Kolreuteria paniculata*, and *Aralia spinosa* stand arrayed in glorified apparel. The straggling trails of the Virginia Creepers spread a blood-red network over the cliff-face, and, seen against the setting sun, the foliage of many of the Vines assumes indescribable tints in which crimson, scarlet, and glowing pink mingle. By the sea-shore the plumed Tamarisk spreads a veil of bronzed gold; the foliage of *Plumbago Larpentæ* on the rockery is maroon-crimson; and at the border's edge the wide, drooping leaves of the Funkias gleam palely yellow.

FLOWERS.

November flowers are few and far between, and remnants that are left us appear on that

account the more desirable. The sweet Alyssum, that on a steep bank has become a perennial, is still blossoming bravely; and the first of the Poppy Anemones has expanded its petals on a sunny, wall-backed border. *Arctotis arborescens*, struck last autumn, and put out as a small plant in the late spring, has spread until it has attained a length and breadth of 6 feet. It has been in continuous bloom since July, and is still starred with numerous flowers; these are Daisy-like in shape, and about 3 inches in diameter, the white petals being relieved by an orange-yellow band at their base—the blossoms are well suited for indoor decoration, lasting fresh in water for many days. *Aster grandiflorus*, whose large, purple, golden-eyed blossoms render it, perhaps, the handsomest of all the Michaelmas Daisies, expanded its first flowers in the concluding week of October, and attained fullest perfection in mid-November. The late-blooming habit constitutes a fatal objection to the use of this plant in northern gardens, but in the south-west such frosts as may occur before it has concluded its display are rarely sufficiently severe to harm the flowers. *Cannas* showed spots of brightness here and there well into the month of November; the noble *C. Ehemanni iridiflora*, which may be left in the open border with impunity through the winter, still holding a few scapes of drooping, rose-coloured blooms. *S. W. F., South Devon.*

(To be continued.)

HOME CORRESPONDENCE.

POISON IN BEER.—The statements which have appeared in the Press, alleged to have been made by me at a "Lecture on the Spraying of Potatoes and Plants for the Prevention of Disease and Insect Attacks," delivered before the Devon and Exeter Gardeners' Association re the poisoning of beer by the Bordeaux Mixture, are as absurd as they are untrue. *George Ryce, 8, Richmond Road, Exeter.*

SEEDING OF BEGONIA GLOIRE DE LORRAINE.—It may be of interest to some readers of this Journal to know that we have a plant of *Begonia Gloire de Lorraine* which has set two flowers, both of which were pollinated by other varieties. We shall be pleased to show them to anyone interested in such matters. *Heath & Son, Royal Exotic Nurseries, Cheltenham.*

THE RAINFALL IN ABERDEEN DURING 1900.—Mr. David McHardy, of Cranford, Aberdeen, who takes considerable interest in matters meteorological, furnishes the following figures, showing the rainfall for the year to November 30, compared with rainfall for the corresponding months of last year. The outstanding feature of the table is the exceptionally heavy rainfall in the months of February, July, and November, compared with the corresponding months of 1899. The figures are as follows:—

Months.	Total depth. Inches.	Number of days on which '01 or more rain fell in each month.	Total depth. Inches.	Number of days on which '01 or more rain fell in each month.
	1899.		1900.	
January ...	4.02	26	3.97	20
February ...	2.56	17	5.22	22
March ...	3.02	22	2.62	25
April ...	3.81	21	1.82	21
May ...	3.26	14	1.19	19
June ...	1.42	11	1.94	17
July ...	2.97	17	4.62	24
August ...	0.58	7	3.33	14
September ..	3.62	28	2.20	21
October ...	0.89	16	3.38	24
November ..	1.38	16	4.98	27
December ...	5.65	27	...	...
Total ...	33.16	222	35.27	234

THE WEATHER IN NORTH CORNWALL.—November was a cold, wet month; more rain fell than during any previous month for the year,

the total being 6.59 inches. This is slightly more than double the fall during November of last year. The greatest fall during twenty-four hours was .99 in. measured at 9 A.M. on Wednesday the 7th. Five times I measured over half-an-inch, and there were only six rainless days. On three consecutive mornings (November 19, 20, 21) the thermometer registered 8° of frost, this constituting the minimum temperature for the month. The maximum temperature was 63° Fahr., on Saturday, November 3. The barometric pressure has been very uneven, the lowest reading was 28.62 inches at midday on Wednesday, November 28; and the highest 30.31 inches at 9 P.M. on Sunday, November 18. *A. C. Bartlett, Pencarrow Gardens.*

GRAPE DIAMOND JUBILEE.—It would be interesting to know upon what basis the fruit committee of the Royal Horticultural Society work in granting certificates of merit to new varieties of fruit. It seems incomprehensible that a body of men sitting for the purpose of examining new fruits should pass over without ascertaining facts before giving their decision, as we are led to believe they did. Mr. Wilks, the secretary to the society, says in his letter, p. 343, in reference to "Diamond Jubilee," that the "committee refrained from passing any opinion for or against the identity of 'Diamond Jubilee' and 'Black Morocco.' They contented themselves with all that concerned them, namely, a statement of their great similarity." We are not much the wiser for this contradictory statement. However, seeing that Mr. Barron, "the greatest authority on Grapes of to-day," was there, as "A. D." informs us, says very little for this gentleman's knowledge. Mr. Barron is doubtless aware of the great similarity between certain Grapes that are totally distinct, e.g., Golden Champion and Duke of Buccleuch, Golden Hamburgh and Buckland's Sweetwater among white varieties, and the striking resemblance there is between Appley Towers and Black Alicante. These Grapes are quite distinct, and are quite eligible to compete as distinct varieties. It will occur to most people, that the fruit committee of the Royal Horticultural Society have a very slipshod, happy-go-lucky way of doing business. Mr. David Thomson, late of Drumlanrig, "the Grand Old Man" in the gardening profession, says of this Grape "Diamond Jubilee"—"that it is a grand Grape, and superior to Maroc and Colman, &c., and will displace many black Grapes so much grown and so little worth growing." This statement from such an eminent authority is worth a very great deal. Mr. Wilks' reference to the seedling Apples from pips of Blenheim Orange is not quite analogous. "Diamond Jubilee" is not a seedling from "Black Morocco." The parents of the former are as distinct from "Black Morocco" as chalk is from cheese. The awards and certificates granted by the fruit committee of the Royal Horticultural Society will, in my opinion, carry very little weight. The other day I noticed that body had granted a certificate to that grandest of all Pears, viz., Doyenné du Comice, when it took them thirty years to find out the merits of this Pear. By-the-way, it would be interesting to know whether it was the merits of the Pear or the exhibitor, Sir T. Lawrence, that got the award of merit. The Royal Caledonian Society do these things better; and I would advise the members of the fruit committee of the Royal Horticultural Society to come down in a body to one of the great fruit shows held in Edinburgh, to learn a lesson they appear to stand so much in need of. I have no personal interest in this Grape one way or the other; but I bought a plant when it was first distributed, to keep abreast of the times. It was the arrogant way in which the committee acted in regard to this Grape that has brought about this discussion. It is evident the committee have committed a blunder; and they should at once take steps to have it rectified. It would be interesting to have a letter from the raisers of the Grape—perhaps they will enlighten us on this matter. *David Airdrie, The Gardens, Larbert House, Stirlingshire.*

[The subjoined letter addressed to Mr. Crump, of Madresfield Gardens, has been forwarded by him to us, at the request of Messrs. Buchanan. Ed.] We are sending you per post to-day a piece of its wood and a few leaves. The latter, you will observe, are preserved to last for some time; these have been most beautifully coloured, and every leaf on the Vine has been sold at about 2d. per leaf, and only a few

left, or we could have sent you larger, better, and more characteristic samples. You will notice the peculiar bend the foot stalk takes from the leaf; the same bend is seen on the piece of foot-stalk on the wood, having also a most peculiar reddish tint. The wood of this Grape in the green state, and up to colouring, has all this reddish tint, and in this alone is most distinct from any other kind we know. We are sorry we have not a bunch left to send you; we have as yet only one Vine fruiting, and nearly all the bunches were exhibited at the shows early in the season, the last being only sent the other day to an intending purchaser. It would certainly be most interesting to have seen a bunch of our Grape along with one of Morocco, with wood and foliage of both for comparison; and we would certainly be only too glad to have been able to have done this, to be placed before any body of well-known Grape-growers, but not before the Royal Horticultural Society's Committee. We knew Black Morocco Grape twenty years ago, but have never grown it here. The idea of any respectable firm trying to send out an old variety—and nearly worthless to boot—such as Black Morocco under a new name at this time of day, and after so many of the new kinds of the last thirty years have been such failures, we think is too ridiculous for any one to take seriously! We invite all Grape-growers who have any doubt as to Diamond Jubilee being one of the most distinct, and the finest black Grape yet introduced, to come here and judge for themselves. Many have already come, including the foremost Grape-growers and experts of the kingdom, and their unanimous verdict has been exactly what we claim for this Grape. *D. & W. Buchanan.*

— I note in the last issue of the *Gardeners' Chronicle* that my neighbour, Mr. Crump, is sending a bunch of the Black Morocco Grape to the meeting of the Royal Horticultural Society on Tuesday, so there may be a chance of settling the question whether the two varieties are identical or not. If my memory serves me aright, the introducers have not told us the parentage or reputed parentage of Diamond Jubilee, simply that it is a seedling Grape. In buying new fruits, &c., raised from seed, the buyer is guided by the origin of them, whether the parents are good or bad doers, of good or bad quality. If that were told us, I think it would settle the question of your correspondent. "Caledonicus" also sends some interesting remarks concerning the Black Morocco Grape. He speaks of the way in which Mr. Cox grew it at Kempsey. I have often heard my late respected master, Mr. C. Wheely Lea, speak of the way in which Mr. Cox grew and finished this variety. He was gardener here for several years after leaving Kempsey, and met with the same success here as rewarded him there. It was grown in ainery along with the varieties Lady Downes Seedling and Mrs. Pince. It is growing here now in the early ininery, in company with Black Hamburg and Madresfield Court. The ininery is started at Christmas, and the Grapes finish with a beautiful colour; they keep well and improve by keeping. By drawing the hand over the bunches and tapping the rods when in flower, no difficulty is experienced in getting a good set. Our Vine carried 19 bunches this year, and several who saw it casually took it for Madresfield Court Muscat. Your correspondent, J. Hamilton, on p. 342, says a special feature is the greenish or purplish colour round the stalks. If he were to give it a trial in an early or second early ininery, in which there is plenty of heat and ventilation afforded, he might overcome that fault. "Caledonicus" also refers to the absence of Diamond Jubilee from the Waverley Market Show, which was a very unfortunate circumstance, as had it been there visitors would have had an opportunity of observing its characteristics and its keeping properties, which are said to be one of its chief merits. *W. Hurlstone, Parkfield Gardens, Worcester.*

— I should like to say a word in reference to the discussion which is taking place in the *Gardeners' Chronicle* about this new Grape, but illness has prevented my doing so earlier. The Fruit Committee of the Royal Horticultural Society expressed the opinion that this variety of Grape was very similar to Black Morocco, and several of your correspondents have not unnaturally concluded that Diamond Jubilee is but the old Morocco under a new name. Now, were this impression to go abroad without contradiction, it would be most

unfair, both to the members of the Fruit Committee and to the raisers, Messrs. D. & W. Buchanan, who are well known, at least north of the Tweed, as the foremost Grape specialists of the day. Several years ago I visited Messrs. Buchanan's nursery, and every year since I have paid



FIG. 130.—PANEL AND SHOW BOARD FOR GRAPES (FRONT VIEW). WIRE-FRAMES SURMOUNTED WITH A PLATE.



FIG. 131.—PANEL AND SHOW BOARD FOR GRAPES (BACK VIEW).

one visit to their vineyards, and have seen their Diamond Jubilee Grape in various stages of growth, that is, every year since it fruited, and never at any time had I the slightest doubt as to its being a genuine seedling, perfectly distinct from any other Grape I know of in cultivation, and by far the finest new black Grape I had yet seen. This was my first impression of it, and what I have seen of it since has now confirmed and strengthened this impression, and I am confident that anyone who visits the "Forth Vineyards," and see it as it is

grown there, will be of the same opinion as myself. The wood, foliage, habit of growth, and fruit, and grand constitution, shape and colour of berries, of Diamond Jubilee, are clearly distinct from those of any other Black Morocco that I have seen. I think this system of judging the merits of a new Grape from a single bunch is most unsatisfactory, both to the judges themselves, who are expected to give a decided verdict in the matter, and to the raisers, who expect that all the good points of their new production shall be taken into account. A bunch may be submitted to the judges that is fine in size of berry and bloom, of excellent flavour, and may even get a First-class Certificate; and still have so many defects and drawbacks as to make it almost worthless. Many of us are familiar with instances of this kind. On the other hand, a new Grape may have all the good points in the world, but these cannot be detected by simply looking at one bunch of it. The most experienced judges are sometimes mistaken. It would have been better had Messrs. Buchanan, in submitting the bunch of their new Grape to the Royal Horticultural Society, sent samples of its wood and foliage, with the full particulars as to its parentage, and if possible a testimonial or letter from some well-known Grape-cultivator who had seen the Vine, and whose name would command the confidence of the Fruit Committee. *A. Kirk, F.R.H.S., Norwood, Alloa, N.B.*

— I have not seen the Black Jubilee Grape; but the Grape called the Black Morocco I am well acquainted with. When living at Peidiswell, Worcester, I had a whole ininery planted with this variety, except one Vine—the Royal Albert, a very noble-looking Grape, producing immense bunches, which seems to be entirely lost sight of. The Grape I grew by the name of Black Morocco, alias Alicante, Great Mogul, and Liverpool—known in Worcester by all these names—is faithfully described by your correspondent "Caledonicus," and answers exactly in every particular to the variety I grew. Many years ago, I, Mr. Petch, Mr. John Cox, and others, had a long controversy over the above and Alicante in these columns. The variety grown by Mr. J. Cox, Kempsey House, was the same as my own. I might state, Mr. Cox and myself were on the most intimate terms during the seven years I was at Peidiswell, and we generally exchanged visits three or four times each year. He certainly coloured this Grape better than I did, or others in the neighbourhood. Since leaving Worcester, forty years ago, I have never come across this Grape anywhere; for the reason, no doubt, of its difficulty in getting a perfect set. It always had to be artificially set, or failure was certain, so no one would expect it to become popular for market purposes. Now, are there more varieties than one going by the name of Black Morocco? When living at Osberton, I frequently paid a visit to Clumber; on one occasion Mr. Moffat, then gardener there, drew my attention to a Vine of Black Morocco. This was not the same variety I knew at Worcester, although it had all its bad qualities, for not one bunch was perfect, and many had but from three to ten berries set, but the berries were more round and quite black. I think Mr. Tegg did away with these old Vines, for I do not remember seeing them again. *E. Bennett, Farnboro', Hants.*

THE CUCUMBER-MELON (see fig. 58, p. 204, September 15, 1900).—I think this is no hybrid, but merely the *Cucumis flexuosus*, the Snake Cucumber, long known and occasionally grown in France, at least, for its curious fruits, which are a yard or more long, straight if hanging, distorted if lying on the ground, green, then yellowish, and looking as much as plant can do like a snake. A description and figure of it may be found in *Les Plantes Potagères* of Messrs. Vilmorin, both in the French and in the English editions. Many of these curious fruits have been exhibited by them in their shows of vegetables at the Paris Exhibition, and they offer seed in their general catalogue. The plant is to be grown just like edible Cucumbers, and the fruit, preserved in vinegar like pickling Cucumber, is said to be very good. *S. Mottet.*

THE MICHAELMAS DAISY AS A POT-PLANT.—The good results obtained by growing a batch of these beautiful autumn-flowering plants, has decided us to cultivate a large number next season for conservatory and house decoration. Such varieties as *Ericoides*, *glauca*, *cordifolius*, *Diana*, *Photograph*, *Patmarcoides*, have such a pretty

effect when mingled with Chrysanthemums in the conservatory, that I am certain they will some day become necessary and beautiful companions to the Chrysanthemum; and we may yet see classes for them detailed in the schedules of Chrysanthemum exhibitions. If offsets are taken at the present time and inserted into porous soil, consisting of equal parts loam, leaf-mould, and sand, in cold frames, they will be ready to pot up at the beginning of the month of March. Three or four plants should be put into 6-inch pots, and stood in an open frame until the beginning of May, when they will be ready to shift into their flowering pots, 8 or 9-inch ones, according to the variety; *A. cordifolius* and *A. Ericoides* types requiring less room than the *A. Novæ-Angliæ* or *A. Novii-Belgii* types. The treatment during the growing season, and until the plants are housed, should be similar to that given to bush-grown Chrysanthemums. I would recommend the following varieties as being useful for the purpose indicated above: *A. cordifolius albus*, *A. c. Diana*, *A. c. Photograph*, *A. Ericoides*, *A. E. glauca*, *A. Ptarmicoides*, *A. Novæ-angliæ ruber*, *A. Novii-Belgii*, *A. R. Parker*, *A. N. B. Ella*, *A. N. B. Cleard*, *A. diffusus horizontalis*, and *A. Tradescanti*. *Sugna*, *Motherwell*, *N. B.*

ROOTED CUTTINGS OF MANETTI AND BRIAR FOR BUDDING THE FIRST SEASON.—The present is a good time for preparing and planting the above with a view to budding in the ensuing summer and autumn, and also for the following year. Strong cuttings of Manetti are usually got from old stools kept in the nursery for that purpose. Strong Briar cuttings can be often procured from Briars growing in the hedge-rows, but only the straightest should be selected. By the use of strong cuttings, and by following the plan hereafter described, there will be a clear gain of a season over the usual method practised. It is customary to plant the cuttings one year, and when rooted to transplant and bud the following year. Although there may be some loss of cuttings by the system here explained, in budding them the first year there is a decided gain in time, and this is an important consideration. The Manetti and Briar cuttings selected should be about as thick as a pencil, and from 9 inches to 1 foot long, and disbudded, except three or four eyes at the top. It would have been better to have had the ground trenched and prepared beforehand, so as to give it time to settle, but even now it is not too late, as the cuttings can be prepared tied in small bundles and heeled in the ground a fortnight or three weeks till such times as it is ready to receive them. I plant the cuttings in two lines, 8 inches apart, on a mound 12 inches wide, leaving an open trench 12 inches wide and 6 inches deep; then follow on with two more lines of cuttings on a mound the same distances apart, followed by the same width of trench, and so on, till the quarter is finished. When the budding season is on, which will be about the middle or end of July, when the cuttings are rooted, the soil can now be drawn from each side of the mound into the trench, the bark being more supple to work on, and which run better a few inches down, and with a skilful hand a good take is almost certain. To return now to the cuttings, these can be planted and made firm by a dibber at the distances given above, leaving two or three eyes out, which, when well secured, could have a 2-inch surface-dressing of Cocoanut-fibre. When the ground is levelled and the budding finished, another desirable object is also gained, i.e., in having the inserted bud as near the root as possible; which, when transplanted a little deeper, virtually makes the plant on its own root. *J. D. Godwin.*

STANDS FOR FRUIT, AND SHOW-BOARDS FOR GRAPES.

THESE appliances of easels and boards and stands have been shown at the Royal Horticultural Society's meetings at the Drill Hall recently, by Mr. W. Fyfe, gardener at Lockinge, meeting with general approval. The Grape stands measure 3 feet in height; and the fruit-stands are of malleable iron, which any blacksmith could make. They stand 6 inches and 12 inches in height, a plate being placed on the stand to hold the fruit. The easels are made by Messrs. Rowney & Co., London. It is certain that

the general adoption of the easels and stands by exhibitors, would help to break up the present uniformity of extensive exhibits of Grapes and hardy fruits, as well as introduce an element of novelty—always desirable. (See figs. 130, 131, p. 422.)

Obituary.

M. DE LA DEVANSAYE.—We greatly regret to have to announce the death of this gentleman at the age of fifty-five, at his residence, Fresne, near Royant. M. DE LA DEVANSAYE had collections of stove plants, but was specially interested in Aroids and Bromeliads. He raised numerous hybrids, and took part in the Hybridisation Conference held at Chiswick in 1899. M. DE LA DEVANSAYE was President of the Horticultural Society of Maine and Loire, and was present at most of the large continental exhibitions and congresses. He was a typical Frenchman of the best type, and made friends with all with whom he came in contact.



THE LATE M. A. DE LA DEVANSAYE

WILLIAM STOCKING, whose death in his eighty-second year was recently announced (see p. 361), was in many ways a remarkable man, having been for sixty years head gardener and forester on the Didlington estate, in the service of Lord Amherst, of Hackney, and his lordship's father. He was beloved and respected by all in the neighbourhood, and his loss is deeply regretted. He entered their service in February, 1841, and discharged his duties uninterruptedly until within a fortnight of his death. The gardening experiences of such a long life spent in active work were very varied and numerous. He could remember and talk about the first Chrysanthemums which he grew over fifty years ago, of the style still familiar in some of the hardier out-door varieties, and he lived to see and grow the huge heads of bloom which are now the fashion. In the same way he would talk of Dahlias, Petunias, Verbenas, Begonias, and many other florist's flowers which had practically come into existence during his gardening career. He looked on *Lilium auratum*, which made its appearance from Japan about 1865, as a thing of very recent introduction; and yet he was able to go with the times to a great extent and to discard the bedding-out fashion of

his youth and middle age, in favour of herbaceous and hardy plants.

Although he never quite entered into the rage for Orchid growing, he was for many years proud of his fine show of *Calanthes*, and in the stove he was very successful in growing the beautiful tree from Burmah, the *Amberstia nobilis*, named after the Earl Amherst, who was Governor-general of India when it was discovered in 1827. The tree flowered well at Didlington under Mr. Stocking's care, especially in the Jubilee year of 1887, which was also the jubilee of the tree's introduction to England.

He had the roads and forestry of the estate as well as the gardens in his charge, and planted woods for Lord Amherst, which he lived to see fine trees of over 60 feet high. It is rare to find nowadays, hard-working men with such a fund of practical knowledge and experience, and the record of sixty years service in a family—of which he had known five generations—is almost unparalleled. *E. C.*

J. DOUGLAS.—We regret to record the death, on November 30, of Mr. J. Douglas, of York, at the age of 85. For many years deceased carried on business in that city, but he was also an ardent practitioner of the art of floriculture, and was amongst those who founded the Grand Yorkshire Gala. He had also been for the past fifty years a member of the Ancient Society of York Florists, and was a steward of that society in the years 1848, '49, '50; becoming vice-president and chairman of committee in 1851. We believe that deceased was almost the last survivor in the York district of what we may term the Old School of Florists. It was chiefly as a grower of Auriculas, Florist's Tulips, and Roses, that he was widely known, and his services as a judge of these were much valued, he having officiated in this capacity several times at the Crystal Palace Shows. *J. L.*

WILLIAM MACAULAY.—This well-known seedsman passed away on the morning of November 24, at Selkirk, at the great age of 90 years. He was a native of Stirlingshire, having been born in the parish of St. Ninians, on February 7, 1810. He was the eldest, and the last survivor of a family of eleven. He served his apprenticeship in the gardens of Plean estate, then belonging to Colonel Simpson, under the late Mr. Laing (afterwards of Stirling, the original raiser of the once famous Stirling Castle Strawberry). After gaining further experience as a journeyman, first at Alva House, on the slope of the Ochil Hills, and then on the adjoining Tillicoultry House Estate, he returned to Plean as head gardener. After a few years, owing to a change of ownership, he left, and was for some short time employed in the nursery of Messrs. Dickson & Sons, of Edinburgh, from which he was appointed to the charge of the gardens on the beautiful estate of the Haining, near Selkirk. He remained there for about twenty-nine years, during which time he saw various changes, both in the ownership of the estate, and among the tenants of the mansion. He thereafter commenced business in Selkirk as seedsman and florist, and this he carried on for about twenty-seven years. Always an ardent horticulturist, and at one time a keen and successful competitor, his services as a judge at horticultural shows were in frequent request in the surrounding district. For some years he held the office of secretary to the Horticultural Society of the town, a position now held by one of his sons. He leaves a widow and family to mourn his loss, and much sympathy is felt for them in their bereavement.

ENQUIRY.

FROSTING EVERGREEN SHRUBS.—A correspondent, *W. C.*, would be glad to be informed of the proper method of doing this.

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 4.—The last meeting but one, for the present century, was held on Tuesday last, in the Drill Hall, James Street, Westminster. There was only a very small number of exhibitors before the Committees, the Hall being less furnished than for some time past. Of the various collections, Orchids constituted a fair proportion, and several Certificates were recommended in respect to novelties placed before the ORCHID COMMITTEE.

The only novelty that gained an award from the FLORAL COMMITTEE was a single-flowered Chrysanthemum named Golden Gem, from Mr. G. W. BIRD, Manor House, West Wickham, Kent.

The FRUIT AND VEGETABLE COMMITTEE recommended a First-class Certificate to an old but not sufficiently widely-known Pear, named Nouvelle Fulvie, shown by Mr. Geo. Woodward, gr. to ROGER LEIGH, Esq., Barham Court, Maidstone; and an Award of Merit to a new Pear named Charles Ernest, shown by Messrs. JAS. VEITCH & SONS, Chelsea.

The LECTURE in the afternoon was given by Mr. MACKENZIE, of the Edinburgh firm, Mackenzie & Moncur. Mr. Mackenzie expressed his disappointment and regret that the principal horticultural society in the metropolis had not a better hall for its exhibitions and meetings than the Drill Hall. The lecturer, no doubt, suffered considerable inconvenience in reading his paper, owing to the extremely poor light in the building, and the absence of assistance.

Floral Committee.

Present : W. Marshall, chairman; and Messrs. C. T. Drury, H. B. May, G. Reuthe, Jas. Hudson, John Jennings, J. F. McLeod, C. J. Salter, C. R. Fielder, J. Fraser, Chas. Jeffries, J. D. Pawle, Chas. E. Pearson, Chas. E. Shea, R. Wilson Ker, and Harry Turner.

Luculia gratissima was shown grandly by Messrs. JAS. VEITCH & SONS, who had several small plants, with magnificent heads of bloom; and by Mr. W. CAMM, Battle Abbey Gardens. A Cultural Commendation was awarded in each case.

Carnation Lady Carlisle was shown by Messrs. GEO. BOYES & CO., Aylestone Nurseries, Leicester. It is a very free-flowering variety, of rich salmon-rose colour. The blooms are large, and have a nice perfume. The same firm had a group of seedling Carnations in pots. Many of the varieties possessed considerable merit. Conspicuous among them were Harrison's White, G. H. Crane, scarlet; Lord Roberts, yellow; General Maceo, very dark crimson; and General Gomez, also crimson, but not quite so deep in shade (Bronze Banksian Medal).

Messrs. KER & SONS, Grassendale, Liverpool, showed a plant of *Cyclamen persicum grandiflorum*, with double flowers.

Messrs. HUGH LOW & CO., Bush Hill Park Nurseries, Enfield, exhibited a *Codiaeum* named Mrs. Thos. Young, a broad-leaved variety, coloured yellow and green, with bright red midribs. The same firm exhibited half-a-dozen plants in bloom of Carnation Mrs. T. W. Lawson. We hope to see this variety exhibited better next season, when the plants have been longer in this country, as it has been described to us by competent critics as a fragrant and pleasing flower, although not exactly of the type that florists in this country admire and insist upon at exhibitions—the petals being slightly frimbriated. Up to this date we have not seen flowers of the variety exhibited that fulfil anticipations that have been held in regard to it, and the blooms on Tuesday last, like those we noticed at a meeting four weeks previously, possessed no perfume.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, again made a display with winter-flowering Begonias of the Begonia \times Socotrana strain. The plants shown on this occasion were grown from cuttings struck last August, yet many of them bore half-a-dozen expanded blossoms. The variety was *Easign* (see p. 372 in our last issue). Winter Cheer was also shown, but the specimens of this variety were similar to those noticed on the occasion of the last meeting (Silver Flora Medal).

An exhibit of a somewhat novel character was made by Messrs. H. YOUNG & SONS, Pansy Nursery, Cheshunt, Herts. These were fancy Pansies and Violas in pots. The plants had been lifted in flower from the open ground, and served to indicate the unusual mildness of the present season (Vote of Thanks).

Messrs. W. WELLS & CO., Ltd., Earlswood Nurseries, Red-Hill, Surrey, showed a group of Chrysanthemums both in pots and as cut blooms. The plants were mostly of the variety Letrier, a late-blooming, white-flowered, decorative Japanese, apparently of first-rate value; Mabel Morgan, yellow Japanese; Sir Redvers Buller, crimson; and Robert Laird, white Japanese, are rather late-flowering varieties of the exhibition type (Bronze Flora Medal).

Messrs. FIDLER & SONS, Reading, exhibited blooms of a pale sulphur-yellow coloured sport from Chrysanthemum Western King, which was named Fidler's Favourite Yellow.

R. HOLMES, Esq., Norwich, exhibited plants of a Chrysanthemum named Tuckwood White, a decorative Japanese variety.

A simple device for making the arrangement of cut flowers in vases as easy as possible was shown by Mr. C. J. WAKEFIELD, 58, Hindon Street, London, S.W. The "Floral Aids" consist of loops formed of wire in such a manner as to support each flower independently of the other. Each "Aid" is mounted on a heavy base.

Mr. WARBUR (care of Mr. WEATHERS, Silverhall Nursery, Isleworth), showed Impatiens grandiflora, a plant 2 to 3 feet high, glabrous, with lanceolate leaves, 4 inches long by $\frac{1}{2}$ inch broad, tapering to both ends, glandular, serrulate; stalk 1 inch long. Flowers on axillary peduncles, half the length of the leaf; flowers about $\frac{1}{2}$ inch across, rosy-lilac, with a long spur; sepals with a network of rosy-purple veins on the inner surface; petals twice the length of the sepals, rosy-lilac.

Awards.

Chrysanthemum Golden Gem.—This is a canary-yellow coloured single Chrysanthemum, with a double row of florets. From Mr. G. M. BIRD, Manor House, West Wickham, Kent (Award of Merit).

Orchid Committee.

Present : Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), de B. Crawshaw, H. Little, H. M. Pollett, H. Ballantine, F. Sander, H. J. Chapman, W. H. Young, W. H. White, W. Thompson, E. Hall, Jeremiah Colman, J. Gurney Fowler, and J. Douglas.

Baron Sir H. SCHRODER, The Dell, Staines (gr., Mr. H. Ballantine), was awarded a Silver Flora Medal for an excellent group of Cypripediums, consisting of several good plants of C. insigne Sanderae, and C. i. Sandercianum; a fine plant of C. i. Harefield Hall variety, with three flowers; C. i. Laura Kimball, C. \times Galatea, The Dell var., with ten flowers; C. \times Arthurianum with six flowers; a fine hybrid between C. \times Harrisianum superbum, and C. Chamberlainianum; and several good specimens of C. \times Lceanum, including "princeps" and "giganteum."

Messrs. JAS. VEITCH & SONS, Ltd., Chelsea, received a Silver Flora Medal for an excellent group arranged in two parts, the one half being devoted to rare Cypripediums, and the other to hybrid Cattleyas, &c. In the former were eleven finely-grown plants of the clear yellow and white Cypripedium insigne Sanderae, bearing altogether fifteen flowers: C. \times Acteus, C. \times T. B. Haywood, C. \times Morgania, some fine C. \times Lceanum, and others; with the latter, the fine Lelio-Cattleya \times Violetta (L. purpurata \times C. Gaskelliana), which had previously been certificated; Phalenopsis \times Hebe (Sanderiana \times rosea, Lelio-Cattleya \times Terentia (C. bicolor \times L. crispa), L.-C. \times Pallas, L.-C. \times The Hon. Mrs. Astor, L.-C. \times Decia, L.-C. \times Lady Rothschild, Cattleya \times Mantini, Epidendrum \times Wallisii-ciliare, &c.

Messrs. HUGH LOW & CO., Bush Hill Park, were awarded a Silver Banksian Medal for an effective group, in which were the fine Cypripedium insigne Harefield Hall variety, C. i. Sanderae, C. i. Laura Kimball, C. \times Lceanum Prospero, the handsome C. \times Memoria Moensii, two very fine Oncidium \times Mantini, with large yellow flowers, prettily spotted with brown; O. Forbesii, Cattleya Dowiana, and a good Cymbidium Trayanum.

Sir JAS. MILLER, Bart., Manderston, Duns (gr., Mr. J. Hamilton), sent two pretty hybrid Orchids, the handsome, between Cattleya \times Brymeriana and Lelia tenebrosa, having the flowers uniformly rose-purple, with darker labellum; and C. Bowringiana \times , resembling C. \times Mantini.

W. THOMPSON, Esq., Walton Grange, Stone (gr., Mr. W. Stevens), showed an inflorescence of a curious Odontoglossum, as O. cordatum var. In shape it resembles O. Madrense. The keeled sepals were brown, with yellow margin and tips; the petals and lip pale yellow, with a few small brown spots at the base.

THOS. STATTER, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), showed a good form of Cypripedium \times Mantide (callosum Sanderae \times Lawrenceanum Hyeannum), C. \times Francesii (Curtisii \times callosum Sanderae), the fine yellow C. insigne Luciani, and Dendrobium bigibbum rubescens.

M. OTTO FROEBEL, Zurich, sent three hybrids of Cypripedium Chamberlainianum, viz., C. \times Helvetia (see *Gardeners' Chronicle*, October 7, 1899, p. 273); C. \times Prince Hussein Kamil (Chamberlainianum \times Boxalli superbum), and a pale coloured variety said to be with C. insigne Chantini, but not resembling those previously shown under that record.

Mrs. HAYWOOD, Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter), sent Cypripedium \times Bingleyense superbum (insigne \times Chamberlainianum), a flower having a fine white dorsal sepal, decorated with spots of a rose-purple tint.

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), sent Lelio-Cattleya \times Sunray (L. cinnabarina \times C. superba), with showy orange-scarlet flowers slightly tinged with rose, the front and side lobes of the lip being of a rich claret-crimson colour.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr., Mr. J. Davis), showed Cypripedium \times Harrisianum albeum, in which the flowers are green, with but a slight trace of the purple marking of other forms.

F. CRISP, Esq., Friar Park, Henley-on-Thames (gr., Mr. P. Knowles), sent a good variety of Vanda Sanderiana.

Mrs. LANGTON, Hillfield, Reigate (gr., Mr. J. Pearce), sent Cattleya aurea Hillfield variety, with pale yellow sepals and petals, and broad rosy-crimson lip with orange-coloured

markings on each side of the middle area, from which a yellow veining changing to white runs towards the margin.

G. W. BIRD, Esq., Manor House, West Wickham (gr., Mr. Redden), sent Odontoglossum \times Andersonianum Manor House variety, a large and finely-spotted form.

G. W. FLOOK, Esq., Leewood, Cardiff, sent Epidendrum ciliare.

M. WARBUR (care of Mr. Weathers, Silver Hall Nursery, Isleworth), showed Cynorchis purpurascens, a fine Madagascar terrestrial Orchid with fleshy leaves and stout spike, with a head of ten rose-purple flowers.

Awards.

Odontoglossum \times Rolfeae melangris (Pescatorei \times Harry-anum).—From W. THOMPSON, Esq., Walton Grange, Stone, Staffordshire (gr., Mr. W. Stevens), the finest variety of this fine hybrid yet exhibited. Flowers large, broad in all its parts, and well displayed. Sepals and petals white, tinted with rose towards the tips, and more heavily with rose-purple on the reverse side, the surface being showily blotched with purplish-brown. Lip broad and flat, spotted with rose-purple on the basal half in front of the bright yellow crest; the apical half pure white (First-class Certificate and Cultural Commendation).

Cypripedium \times Lceanum Prospero majus (Spicerianum \times insigne Sanderae \times), from Messrs. JAS. VEITCH & SONS. A noble flower in its delicate tints, showing the influence of the yellow C. insigne Sanderae plainly. The large dorsal sepal had a bright green base, relatively small to the large pure white upper portion, which also bore a few light-purple spots. Petals and lip as in C. \times Lceanum giganteum, but much lighter.

Fruit Committee.

Present : George Bunyard, Esq., chairman; and Messrs. H. Markham, G. Norman, E. Beckett, Jas. Smith, F. Q. Lane, H. Balderson, Geo. Wythes, C. Herrin, Geo. Woodward, W. Farr, W. Bales, S. Mortimer, Alex. Dean, Jas. Veitch, W. Pope, J. Wright, Geo. Kelf, E. Shaw Blaker, W. Poupert, H. Esling, Jos. Cheal, W. Wilks, and J. Willard.

Mr. W. CRUMP, Madrasfield Court Gardens, Malvern, showed a bunch of fruits and some foliage of Grape Black Morocco, the variety that has been much discussed in these columns recently in connection with the new Grape Diamond Jubilee (Cultural Commendation).

Messrs. H. CANNELL & SONS, Swanley, Kent, showed some excellent roots of "Prizewinner" Parsnips, a selected stock from the old Hollow Crown. The roots were very large and solid.

Messrs. DOBBIE & CO., Rothesay, N.B., and Orpington, Kent, showed some splendid specimens of International and Champion Leeks; also some new varieties of Turnips, showing the result of certain crossings. One cross was from Model White \times Early Milan, with a view to securing an extra-early deep-formed Turnip with a purple top. Another one from Model White \times Harrison's Marble, in order to get a deep-formed green-topped Turnip than Harrison's Marble. Another cross was effected between Golden Ball \times Harrison's Marble, with the object of obtaining a yellow-fleshed green-top garden Turnip of good form. Harrison's Marble \times Golden Ball it was hoped would produce a yellow-fleshed green-top Turnip of good form. Another cross was made between Model White \times Veitch's Red Globe, to secure a fine-fleshed deep-formed Turnip with a purple top; and Model White \times Strap-leaved Purple Top it was hoped would yield a strap-leaved white-fleshed Turnip of good form. The last cross we noticed was one effected between Red Globe \times Golden Ball, to obtain a red-topped deep-formed yellow Turnip. Although the effect in every case was not quite what was sought, in several instances the results were satisfactory, and of much interest.

Mr. JAS. HUDSON, Gunnersbury House Gardens, Acton, exhibited some jelly made from fruits of Cydonia japonica. It was very pleasant, and had an agreeable and peculiar flavour.

Mr. JOHN WATKINS, Pomona Farm, Hereford, was recommended a Vote of Thanks for some fruits of British Queen Apple.

Awards.

Pear Charles Ernest.—This is a new Pear, shown by Messrs. JAS. VEITCH & SONS, Chelsea. The fruits were of large size, pyriform in shape, large below the eye, suddenly and considerably tapering towards the stalk, skin yellow, with small dark spots around the eye. Eye open, in shallow basin of moderate size; stalk an inch or so long, and inserted obliquely; flesh exceedingly juicy, and melting, flavour moderate. It will be likely to prove a very valuable late Pear, and will make a fine show at exhibitions (Award of Merit).

Pear Nouvelle Fulvie.—This is a first-class late Pear, which, according to Hogg, was raised by M. Grégoire, of Jodoigne, in Belgium, in 1854. The fruits are from moderate to large size, and the skin yellow, marked much with russet, and developing a red colour on side exposed to the sun. It keeps in good condition until February, and is not cultivated so frequently as the variety deserves to be. In Hogg's *Fruit Manual* it is described as "not good at Teddington," but as large and very delicious in the Weald of Sussex. Excellent specimens were exhibited by Mr. Geo. Woodward, gr. to ROGER LEIGH, Esq., Barham Court, Maidstone, the flavour of which was excellent, and the flesh melting. Mr. Woodward says the variety needs to be afforded the protection of a wall, even in Kent, and the fruits he showed were gathered from a tree upon a wall with a west aspect. Given these conditions, the variety makes free growth, and is a free cropper (First-class Certificate).

The Lecture.

THE HEATING AND VENTILATION OF GLASS-HOUSES.

A lecture was delivered in the afternoon on the above subject, by Mr. A. Donald Mackenzie, of the well known firm of Mackenzie & Moncur, horticultural builders, Edinburgh.

Mr. Mackenzie commenced by saying that the enormous increase in the prosperity of the country during the past fifty years had led to a great demand for horticultural buildings. The days of the old brick-throats for heating purposes were long since past, and the hot-water system was generally in use. By means of a diagram, Mr. Mackenzie showed an apparatus with a rise of 5 feet, and another one with a rise of 10 feet, from the lowest to the highest point. Explaining the theory of heating by hot water, it was remarked that the flow pipe must always proceed from the highest point of the boiler, and the return-pipe enter the boiler at the lowest point practicable. The whole apparatus, including boiler, was thus an endless tube, and its circulation was explained somewhat as follows. Heat being applied to the water in the boiler, the water commences to expand, and it expands equally in all directions; but there being less resistance to this expansion at the top of the boiler, the whole effect of the expansion is produced there, and the water commences to pass through the flow-pipe. This is partly due to the greater density or weight of the water in the bottom or return-pipe, which is also less in diameter than is the flow-pipe.

The motive-power requisite for the proper heating of hot-houses was explained to be in exact proportion to the difference between the highest and lowest points. The greater the difference, the freer would be the circulation of the water. Some persons, said the lecturer, who have not sufficiently studied the question, had tried to do without a stoke-hole, and therefore without sinking the boiler, but this was an impossible idea, and quite contrary to the science of hot-water engineering. For instance, it was said that whilst a boiler might be quite sufficient to heat 1,000 feet of piping, where there was a rise of 3 feet, the same boiler would only be sufficient for 750 feet of piping where the rise was one of only 5 or 6 feet.

Another point it was necessary to consider was that of friction, which might seriously hinder circulation. By experience it had been found that the friction on the walls of the pipes, &c., could be best met in eighty cases out of one hundred by the use of 1-in. pipes. In very large works, and for mains, the size should be larger.

Coming to a very practical part of the question of heating houses, Mr. Mackenzie said there were no scientific rules to regulate the necessary apparatus for certain cubic feet of space, but practice had taught the lesson that provision should be made to counteract 32° of frost. Such severe cold may seldom be experienced, but when it did occur it was necessary that the heating apparatus should be sufficient for the case. Taking this standpoint, Mr. Mackenzie proceeded to state the amount of apparatus he considered necessary for particular houses per cubic feet. In an ordinary conservatory where a temperature of 45° to 50° was required, 1 foot of 4-inch pipe would be sufficient for 95 cubic feet of space to be heated. In plant-houses where a higher temperature is needed, 1 foot of 4-inch pipe would only be sufficient for 20 or 25 cubic feet of space. For stoves and hot Orchid-houses, 1 foot of 4-inch pipe might heat 12 or 13 cubic feet of space, and for an early vinery about 15 feet of space. In an intermediate vinery with a span-roof, 1 foot of pipe would heat 17 cubic feet of space. In early Peach-houses the same amount of pipe would be sufficient for 17 to 20 cubic feet, and in late Peach-houses for 25 to 28 cubic feet.

In the case of a forcing-house containing a hotbed, there should be four rows of hot-water pipes below each bed, and, as only one-half of their usual power must be expected from them, there should be another row of pipes on the sill of the house, and some under the gratings in the path.

Turning to the question of "Boilers," it became evident that Mr. Mackenzie had been studying the early volumes of the *Gardeners' Chronicle*, for he said that upon the merits and demerits of particular boilers there had been more argument than upon any other horticultural subject. Those who doubt this statement of Mr. Mackenzie's, we recommend to consult issues of the *Gardeners' Chronicle* during the seventies and eighties. Mr. Mackenzie proceeded to say that much of the praise a patentee obtained for his new boiler might be dismissed as rubbish. The old saddle-boiler, with or without water-way bars (which should only be used under reasonable conditions, and where there was a good draught), was recommended as the best style—most economical and simple—for apparatuses where the length of 4-inch pipes did not exceed 700 feet. The terminal saddle-boiler was useful for lengths of pipes from 300 to 2,000 feet. It is practically a saddle-boiler with an extra flue that brings the heat a second time to the front of the boiler, and increases its effectiveness about 100 per cent. For 2,000 or more feet of piping, Mr. Mackenzie recommended the Cornish steam-boiler made of steel and rivetted, and if the draught be very good, use water-way bars. But in steam-boilers said the lecturer, a smart, quick fire was needed, and it should not be banked up for eight or ten hours at a time, as was done with the hot-water boilers.

Then Mr. Mackenzie went on to explain an American boiler that was made in sections, and could therefore be moved into stoke-holes and other places where large-made boilers could not be got. These boilers were made of cast-iron.

A subject that has caused many a gardener a very great deal of worry was next referred to by the lecturer. It was the difficulty that occurs in regulating the heat and maintaining proper circulation in cases where there are many

houses to be heated at varying heights and distances from the boiler, and therefore shorter and longer "circuits." There was only one way to get over such a difficulty, and that was by regulating the valves, which could only be done successfully by persons who had given a considerable amount of study to the subject. But it was required that the return from all the circuits should be brought into the return main-pipes about the same time.

VENTILATION.

Mr. Mackenzie said he had left himself but little time to speak of the subject of ventilation, but which was a very simple matter. There should always be provided means of affording top and bottom ventilation, and the top ventilation should be at the highest point in the house, and the bottom as near the base as circumstances would permit. The air that entered the house should be caused to pass over or near to the hot water pipes in order that the chill might be removed from it. At top and bottom the method of ventilation employed should permit of a very little air, or a great volume, being admitted according to circumstances which vary from day to day.

Mr. H. J. Pearson (Chairman) emphasized the need to provide an ample supply of piping in the houses. He also said that the lecturer had not mentioned the advantages to be gained in certain circumstances, by putting a hot-water pipe along the eaves of a house where plants will flower during winter. [We have ourselves seen the excellent effect of this in the Pelargonium-houses of Messrs. Cannell, at Swanley.] Mr. Pearson also gave some useful hints in respect to the difficulty of obtaining a circulation of water under circumstances described above by Mr. Mackenzie. In respect to ventilation, that at the sides of a house should be put below the stage, if not, the plants were subjected to a continual cold draught when the ventilators were open, and this was bad for plants as for ourselves. A few words of advice were then given to the British gardener needing new glass-houses. He was advised to buy them upon the same principle that he would get a suit of clothes, which Mr. Pearson presumed he would be likely to purchase from an establishment where he thought it he would get good material and a good fit, rather than at one where the chief recommendation was one of cheapness in respect to the first cost. It was very important that well-seasoned timber be used.

In reply to a vote of thanks, Mr. Mackenzie corroborated most of Mr. Pearson's remarks, and said it was an accidental omission on his part that he did not mention the putting of pipes along the eaves of certain houses. He had frequently used them for such purpose with good results.

Mr. Mackenzie concluded with a regret that the most important horticultural society in the metropolis of the world had not a better hall in which to hold their meetings and their exhibitions. Some of the diagrams that the lecturer had brought from Scotland could not be displayed for lack of necessary convenience.

LINNEAN.

NOVEMBER 15.—Mr. C. B. Clarke, Vice-President, in the Chair.

Mr. W. B. HEMSLEY, F.R.S., F.L.S., exhibited a number of specimens and drawings of *Fitchia* (Hook. f., in *London Journal Bot.*, iv., p. 640, pls. 23, 24), including a new species from the island of Raratonga in the Cook Archipelago, discovered by Mr. T. F. Cheeseman, a Fellow of this society. The genus was described from specimens thought to have been procured on Elizabeth Island, a remote coral island in the Eastern Pacific; but Mr. HEMSLEY gave reasons for believing that the locality of the plant described by Sir Joseph Hooker was Tubuai Island in the same latitude, but 20 further to the west, an island of volcanic origin and mountainous, and therefore more likely than a coral-island to be the habitat of such a plant, especially as it was originally discovered by Banks and Solander in Tahiti. Only three or four species are known; they are small, resiniferous shrubs of tree-like habit, with rather thick branches, opposite simple leaves borne on slender stalks, and terminal, usually solitary flower-heads. The systematic position of *Fitchia* is not very evident; although usually placed in the *Cichoriaceæ* (Benth. & Hook. f. *Gen. Plant.*), Mr. Hemsley considered its affinities as a resiniferous plant to be with the *Helianthoidæ*, and near to *Petrobium*, a monotypic genus of St. Helena (Hooker, *Icon. Plant.*, t. 1053). After discussing the views of systematists on this point, he briefly described the new species from Raratonga (*Fitchia nutans*), remarking that it secreted a resin which is exuded on the young branches and flower-heads, and is used to prepare an agreeably odiferous oil.

Mr. Hemsley next exhibited an abnormal cluster of fruits of the edible Chestnut found by Mr. Charles Read, of Sway, in the New Forest, and forwarded to Kew by the Rev. J. E. Kelsall. Usually there are two or three, rarely four in a cluster; but in the specimen exhibited there were at least fifteen, the largest nuts measuring about an inch in their greatest diameter.

He also exhibited a curious flask-shaped bird's-nest, which had been sent to Kew by Mr. J. H. Hart, Director of the Botanic Garden, Trinidad, but without any information concerning the bird which built it. It was constructed almost entirely of the soft plumose seeds of a species of *Tillandsia* (*Bromeliaceæ*). It measured a foot in length and between 4 and 5 inches in its greatest diameter; and had the entrance at the base, the receptacle for the eggs being near the top of the inside.

Mr. J. E. Harting, F.L.S., in reply to a question from the Chairman, said that without seeing a specimen of the bird

which had built the nest in question, it was not easy to name the species with certainty; but that it was doubtless the nest of an Icterus, and probably of *Icterus leucopteryx*, commonly known in the West Indies as the Banana bird.

Mr. JAMES GROVES, F.L.S., on behalf of Mr. Cecil R. P. Andrews, exhibited specimens of a Sea Lavender new to the Channel Islands, *Statice lychnidifolia*, Girard, discovered by Mr. Andrews in August of the present year growing springing on low rocks by the sea in Alderney in company with *S. occidentalis*, the most nearly allied British species. The distinguishing characteristics of *S. lychnidifolia*, as noted by Mr. Andrews, were the large, many-nerved leaves, the stout scapes with large scales, the broad dark bracts, and the triangular calyx-teeth.

Mr. W. C. WOODSLEY, F.L.S., read a paper entitled "Further Observations on the Cycadaceæ," intended to throw additional light on the problems as to the phylogenetic origin and relationship of this group of plants. By some authorities these have been considered as allied to the Conifers, while in appearance they resemble Palms and Ferns. They are now confined to the warmer regions of the globe, though they were formerly widely distributed. The group was at its maximum in Jurassic and Triassic times; and Cycad remains, especially in the Lias and the Oolite, are familiar to paleontologists in this country. This paper, like the rest of the author's work on this group, had two main objects—to contribute to the clear and precise knowledge of the vegetative structure, and to point out, by means of that knowledge, the relationship of the Cycads to, and their descent from, Fern-like plants. The structure was made clear by a series of lantern-slides and diagrams.

On behalf of Miss Alice L. Embleton, a paper was read by Prof. G. B. HOWES, Sec. Linn. Soc., on a new entozoon Copepod (*Goidelia echinura*), found together with an Infusorian (*Trichodina*), in the rectum of a new Japanese marine worm (*Echinurus uncinatus*), recently described by her in the Society's *Transactions*.

THE HAMBURG CHRYSANTHEMUM OF 1900.

To me, who had become almost resigned to the present formal and more or less cramped nature of a London show, it was a pleasant change to enter the huge Velodrom in the Rotherbaum Chausée, in Hamburg, and note the difference in the appearance of the whole exhibit, as compared with our more stiff and confined efforts at home. We have not, in London at all events, a building so suitable as the one used by the Hamburg Chrysanthemum amateurs for their annual gathering, a fact which makes one year for the more frequent use of the great glass structure at Sydenham, where the interior furniture adds so much to make an exhibition attractive and pleasing.

It was a pleasant journey from the railway station to the Velodrom by the electric tram. The town is justly entitled to pride itself on its complete and systematic method of working. The exhibition was opened at 3 P.M. on November 17 by the Burg-master, which ceremony was attended by quite 400 of the leading inhabitants of the town. Several appropriate speeches were made, and then the visitors moved from the cycle track, where the initial formalities had taken place, and entered the inner portion of the building, where the flower show proper was to be seen.

I have no intention to simply compile a record of prize-winners and their never-ending lists of varieties, at the same time a few of the more prominent exhibitors can hardly be excluded; but the principal idea was to make a readable account of the show in a more general way, noticing where more difference of style or method was introduced, as compared with what I had been accustomed to see at home.

The inner portion of the building, alluded to previously, was surrounded on the outer side by Pines, varying from 15 to 20 feet in height. Somewhere about 300 of such trees were used, and against this background the groups of the various exhibitors were placed in many shapes and sizes, leaving the more central part for the use of the visitors who may care either to rest in chairs provided by a thoughtful committee, or promenade the length of the building, as choice or inclination directed. A good band added extra charm to the display, and for six hours each day, with an interval of rest, assisted to elevate still further the minds of those who were fortunate enough to be present, and which gave to the Conservatives and the Social Democrats alike the chance both to forget their politics and the seasonable but most uncomfortable weather existing outside.

At each end were two enormous groups, which consisted in the background of large specimen trees in tubs, such as Sweet Bays, Oranges Palms, &c., in front of which stood a number of Chrysanthemums, mostly standards and half-standards, carrying eight to twenty blooms each. The front portion was finished off with *Dracenas*, *Aspidistras*, Palms, and a final edge of *Selaginellas*, which was bordered with green-painted bent wood, just in the shape desired by the exhibitor, which arrangement was the same with all groups, so far as the wood is concerned.

On both sides nearly all the length was covered by seventeen groups, many of which contained very creditable specimens; one may be especially noted, carried the 1st prize, with twenty-five standards of the single Chrysanthemum "Ada Owen," which, if for cultural skill alone, was deserved. The secretary, Mr. CARL SCHUMACHER, seems to have done a great deal more than his share of exhibiting, for several groups carried his name as the prize-winner.

While noting the last-named gentleman's exhibits, a slight digression might be allowed the writer, as for several

days rumours were afloat in Hamburg that, in order to beat the exhibit of this esteemed gentleman, it would be necessary either to bring a musical or a talking Chrysanthemum; but whether such rumours originated in the home of rumours, the Stock Exchange, or not, there was no possibility of discovering. The particular item alluded to was a supposed scented flower and the mere idea of possibly being able to see some startling novelty, and eventually being able to become the possessor of the same, either by the payment of some fabulous sum of money, or by breaking one of the recognised laws of the society, caused me a considerable amount of unrest during the preliminary proceedings; but on arrival before the presumed violet-scented variety, the illusion was quickly dispelled. But whether from an absolute disregard of truth, or from a personal physical defect, no trace of such scent could be found; and thus all hopes of being able to take such a treasure back to England, and there make a huge fortune besides which all mere exchange or mercantile gains would be lost in comparison, were dashed to the ground. Later in the day, however, a possible reason was discovered for the rumours referred to above, when it was seen that an English firm was in the field, and well able to hold their own, and the said rumours may possibly have been floated with a view to intimidate in a humorous kind of way such foreign intervention.

The firm of REIDS, nurserymen, Beckenham, London, brought 300 large blooms which, according to the various press reports, were the largest in the show, also some seventy bunches of single zonal Pe argoniums, which were arranged in a semi-circle in the centre of their exhibit, standing about 5 feet high at back, surmounted by large Palms, and the name of the firm in a green frame of sepia and other coloured wording. A large green background of velvet helped to display the brilliant colours to advantage. On each side of the central portion, and standing some 8 feet away, were two large Japanese vases filled with Chrysanthemums, and further on two smaller vases stood out in relief from amongst the Chrysanthemums, which filled all the remaining spaces; Smilax and Berberis hung in festoons and trails, making altogether a somewhat novel form of exhibiting, which evidently took the fancy of the visitors. The firm were awarded the Prize of Honour, and a photograph of the same will appear in *Möller's German Gärtnerei Zeitung*.

The principal thing to notice in the cut flower department was the entire absence of show boards, the whole of the blooms being set in glass vases. Such firms as Messrs. BORNEMANN, H. MYERS, HYNECK, and KRÖGER made a large display, a feature with some being to display a number of blooms of a few varieties.

A great feature of the show was the forty or more decorative objects, one of which was an arrangement of fruit on a silver-grey shield, supported on a rustic stand. This was a very harmonious and *chate* design. There were several others also very good, the predominating colours of the flowers used being green and rose, with a little white and brown.

The table decorations were exceedingly fine, that which carried the 1st prize being a dining-table for sixteen persons, the blooms used being green and white Chrysanthemums, much enhanced by the full complement of silver and glass. Further along the centre of the promenade was a small group of Madame Ed. Roger, the green Chrysanthemum; these were summer-struck, and were very creditable to the grower. Near by were to be seen another group of circular form, also summer-struck plants, containing say 100, varying from 1 foot to 3 feet in height, and carrying really good flowers.

To conclude with, a notice of the Chrysanthemum lottery, which seems to be a necessity of Hamburg life, where the visitors may vote by ballot as to which of forty blooms in their opinion were the best, the owner of the blooms obtaining the greatest number of votes receiving a prize.

Quite a number of Hamburgers should be seen at the Aquarium next November, if only a small percentage arrive of those who expressed a determination to come. I hope they will see something to interest them, as I did when visiting their show, which was to me a pleasant and educating experience, was greatly aided by their cordial reception. *H. W. Barnes.*

DARLINGTON CHRYSANTHEMUM.

NOVEMBER 23.—This new candidate for the favour of the public held its second show of Chrysanthemums, fruit, &c., in the Central Hall, Darlington, on the above date. The show was stated by Mr. BOUSFIELD, who presided at the opening, to be a most successful one. The exhibitors were chiefly persons resident in the district.

ABERDEEN CHRYSANTHEMUM.

NOVEMBER 23, 24.—The members of this young Society held a show of Chrysanthemums on the above mentioned dates in the Trades Hall, which exceeded in excellence all their previous displays. The entries numbered nearly 600.

The distinctive features of the exhibition were the groups of Chrysanthemums and foliage plants, 10 feet in length by 5 feet in depth. These entries presented lovely masses of many-coloured blooms, and Sir WILLIAM HENDERSON, Devanha House, Aberdeen (gr., Mr. Proctor), is to be congratulated on taking the 1st prize in this class. Along the top of the hall specimen plants in pots were arranged in excellent condition. The other exhibits were arranged on four tables, extending to the full length of the hall. The following were the special prize-winners:—

Silver salver, awarded for the best group of Chrysanthemums in the show, to Sir WILLIAM HENDERSON, Devanha House, Aberdeen (gr., Mr. John Proctor).

Twelve best Chrysanthemums, Mr. W. MOIR, Rosehaugh, Ross-shire, 1st.

Six Japanese Chrysanthemums, in three varieties, JOHN GRIGOR, gr., Maryhill, Elgin, 1st.

Six best Chrysanthemum blooms, grown by an amateur, Mr. WILLIAM COULTS, Strawberry Bank, Aberdeen, 1st.

Six incurved Chrysanthemums, Mr. COULTS.

Four varieties of Chrysanthemums, naturally-grown bushes, Mr. J. MINTY, Canal Road, Aberdeen, 1st.

Chrysanthemums arranged for effect, Mr. DOUGLAS, gr., Middlemuir, Aberdeen, 1st.

For pot plants, which were much and deservedly admired, the following were the leading prize-winners:—Mr. A. PARK, Leckmeil Gardens; Mr. J. Elder, gr., to Sir DAVID STEWART, Banchoy House; and Mr. A. GRIGOR, gr., Fairfield. In cut flowers, Mr. JOHN PRIDE, gr., Strichen House; Mr. E. NOONAN, gr., Stonewood House; Mr. A. KING, gr., Danestone; Mr. FRANK FRASER, gr., Tillery House, Aberdeen; and Mr. JOHN ROBERTSON, gr., Ferryhill House, were the best.

What added not a little to the attractiveness of the exhibition, was a fine competitive display of fruits and vegetables by leading northern gardeners.

In the non-competitive classes, attractive displays were made by Messrs. SMITH & SONS (Aberdeen), Chrysanthemums, Orchids, and objects of the florists' art; by Messrs. BEN REID & CO., who had a tasteful display including stands of Chrysanthemums, bouquets, &c.; Mr. W. WELLS, of Redhill, Surrey, a large number of blooms of new varieties, and also blooms of Autumn Queen, and several of Mr. WELLS' blooms were awarded Certificates of Merit. Another honour secured by Mr. WELLS was the special Silver Medal awarded to Mr. PARK, Leckmeil, Ross-shire, for the best blooms of a variety introduced by Mr. WELLS; and a 2nd prize of a Bronze Medal for a similar exhibit was awarded to Mr. WILLIAM MOIR, Rosehaugh, Ross-shire.

DEVON AND EXETER GARDENERS'

NOVEMBER 23.—At the fortnightly meeting held on the above date, a lecture was given by Mr. GEO. RYCE, B.A., Agricultural Science Lecturer of the Devon County Council, the subject being "Spraying Plants for the prevention or remedy of fungoid diseases." Mr. RYCE illustrated his lecture by means of a lime-light lantern.

He first traced the life history of common parasitic fungi, their origin, their development, their dispersion; and then showed the ill effects of their ravages on their plant hosts. He next described the effects of spraying with suitable chemicals, mentioning the best season for doing it; the best methods, and the formulae of various mixtures suitable for Potatoes, Peaches, Apple and Pear-trees, Vines, Chrysanthemums, &c. Mr. RYCE laid much stress on getting only the purest of chemicals, mixing them in wooden, not metal vessels. Seeing, moreover, that the necessary proportions were neither exceeded nor decreased, as a badly balanced mixture might work mischief instead of doing good. Incidentally, he suggested that in spraying with Paris Green, an ill-balanced preparation might, in application, leave a dangerous deposit on such a crop as Hops. By some means this hint was reported in the local, and some of the London morning papers, as referring to the Bordeaux Mixture. Mr. RYCE promptly refuted this in a letter to the press, pointing out that as there was arsenic in Paris Green, and practically nothing but salts of copper in the Bordeaux Mixture, the report as first given, was palpably absurd, some of the results shown went far to convince the audience of the usefulness of spraying. A hearty vote of thanks was accorded to the lecturer.

NATIONAL CHRYSANTHEMUM.

DECEMBER 4, 5, 6.—The National Chrysanthemum Society has now held the last of the general exhibitions, and of the meetings of the Floral Committee arranged for the present season.

The FLORAL COMMITTEE held its final meeting at 1 P.M. on Tuesday last, when the following awards were made to novelties, which, singularly enough, included no Japanese variety.

Chrysanthemum May Bell.—This is a seedling variety of the true incurved section. The flowers shown were very large, with broad blunt florets, colour pale pink, with silver reverse. Little of the pink colour may be seen. A very promising variety, shown by Mr. WEEKS, Thrumpton Hall Gardens, Derby (First-class Certificate).

C. Miss Jessie Pinnington. This is a single-flowered variety, pink, with a narrow circle of white around the disc. The blooms are rather less in size than a crown piece, are good in form, but have a double row of florets. Shown by Messrs. W. CLIBRAN & SON (Award of Merit).

C. Lady Windsor is a single variety of fairly large size, white, with rosy-red tips to the florets. From Messrs. CLIBRAN (Award of Merit).

C. Robert Morgan.—This is a large, single-flowered variety, with double row of florets, colour vivid crimson, with peculiarly green disc. Shown by Mr. G. W. FORBES, Regent House Gardens, Surbiton (Award of Merit).

The competitive early winter exhibition was opened in the Royal Aquarium, Westminster, on Tuesday last, and was continued until Thursday. The display was a very good one, and the opinion was expressed by some that it was one of the

very finest exhibitions the Society has held in the month of December. The blooms were certainly fresher in appearance than was the case at the corresponding show last year, but exhibitors are still nervous of including in their collections a greater number of naturally late-blooming varieties, because the same are smaller in size than those which bloom in November.

The excellence of the incurved blooms shown by Mr. HIGGS, of Fetcham Park Gardens, deserve remark.

In addition to the exhibits in the competitive classes, there were magnificent collections of blooms from the trade growers, and many visitors to the show will remember for a very long time the flowers of Madame Carnot and some of its sports shown by Mr. NORMAN DAVIS—larger in size than any Japanese blooms we remember to have seen exhibited previously. Lady PIGOTT had a remarkable group of miscellaneous plants.

The arrangements, which were everything to be desired, were in the hands of Mr. RICHARD DEAN, V.M.H., Secretary, who has had most to do with each of the shows held during the season.

CUT BLOOMS (JAPANESE).

Mr. R. KENYON, gr. to A. F. HILLS, Esq., Monkham, Woodford Green, Essex, won the principal prize for 2 blooms in not fewer than 18 varieties, staged on board. He had very fine blooms of the following varieties:—R. Laird (white), Mrs. Barkley, Madame R. Cadbury, J. R. Upton, Mrs. E. Barter, G. J. Warren, M. Chenon de Leche, and Madame G. Debie. *Centre row*: M. Chenon de Leche, M. L. Remy, Mrs. J. Bryant, Mutual Friend, Mrs. Barkley, F. Molyneux (white Japanese incurved), Etoile de Lyon, Madame Von Andre. *Front row*: R. H. Langton, George Towers, J. Chamberlain, Mutual Friend, J. R. Upton, Khama (a pale red, rather loose Japanese flower, buff reverse), and Oceana. The 2nd prize was won by Mr. W. C. MODRAL, gr. to Major FRANK SHUTTLEWORTH, Old Warden Park, Biggleswade, who had very pretty blooms of Mairy Wonder, Ada Chatin, and Chatsworth. 3rd, Mr. J. SANDFORD, gr. to G. W. WRIGHT-INGLE, Esq., Wood House, North Finchley.

Mr. R. KENYON also won the 1st prize in a class for twelve Japanese blooms, showing similar varieties to those in the larger class. Mr. C. PAYNE, gr. to C. J. WHITTINGTON, Esq., Elmhurst, Bickley Park, Kent, was 2nd; and Mr. J. SANDFORD was 3rd. He included a nice fresh-looking bloom of Madame R. Cadbury, a white, smooth Japanese, with pale lemon tint towards centre.

The class for six blooms was won by Mr. John Aplin, gr. to W. MEATH BAKER, Esq., Hasfield Court, Gloucester.

INCURVEDS.

Mr. W. HIGG, gr. to J. B. HANKEY, Esq., Fetcham Park, Leatherhead, who was so successful at the November show, again won first honours for these. His collection of twelve blooms was grand, and included the following varieties:—Mdlle. Lucie Faure, Ialene, Ma Perfection, Miss Dorothy Foster, Bonnie Dundee, Miss L. D. Black, Mrs. J. Eadie, and Chas. H. Curtis. Mr. C. PAYNE and Mr. G. W. FORBES followed. There were seven exhibitors.

OTHER TYPES.

There was a class for twenty-four bunches of Chrysanthemums, any varieties, including Pompons. These were shown in vases, and in none of the exhibits had those responsible for them taken the trouble to attach names to the varieties. Mr. R. KENYON was 1st; Mr. W. HOWE, gr. to Lady TATE, Park Hill, Streatham Common, 2nd; and Mr. John Aplin, gr. to W. MEATH BAKER, Esq., Hasfield Court, Gloucester, 3rd.

In the class for six bunches of Japanese varieties, distinct, three blooms to form a bunch: 1st, Mr. W. Tipler, gr. to Miss SMITH-DORRIS, Hartwell Cottage, Aylesbury. His blooms were of moderate size, fresh looking and slightly. The varieties were G. J. Warren, lemon yellow; Mme. Carnot, Mme. P. Rivoire, Lady Hanham, Amiral Avelan, and Niveum.

No second prize was awarded, but the blooms shown by Mr. S. FOSTER, gr. to R. IVESON, Esq., Tenterden Hall, Hendon, were placed 3rd. This was a drop, indeed, from comparative excellence to exceedingly irregular rough-looking blooms. The only commendable blooms being one of Oceana and another of Le Grand Dragon.

The next class in the series was one for six bunches of large-flowered single varieties, not disbud, and here Mr. G. W. FORBES, gr. to Madame NICOLS, Regent House, Surbiton, was 1st with a good lot of charming varieties, the blooms fresh, and in general, perfect in form. We may specially note Catherine Williams, a canary-yellow flower; Rudbeckia—reminding one of *R. speciosa* in tint and form of flower; Miss Brown, yellow and pink; Regent Gem and Lady Tennyson, a mauve-coloured flower, inclining in build to semi-doubling of the florets. 2nd, Mr. W. C. PAGRAM, gr. to J. COURTENAY, Esq., The Whim, Weybridge. This was a group of much smaller blossoms, the best of which were Elizabeth, bright pink, paling to white in the centre; and Mrs. Roberts, having white, thread-like florets, semi-double rather than single. 3rd, Mr. F. BUSH, gr. to W. T. LISTER, Esq., Rose Hill, Totteridge, Herts. The best were Parity, a white-flowered variety, with incurving florets; and Atalanta, also white with straight thread-like florets.

The class for six small-flowered varieties, not disbud, distinct. 1st, Mr. G. W. FORBES, with pretty varieties in good trim, the best of which were the pale-mauve Mrs. D. B. Crane, Miss A. Holden, Nelly Robertson, rosy purple, and Mary Anderson. 2nd, Mr. R. C. NORTH, Broughton Road Nursery, Ipswich, whose blooms were of smaller size, but fresh looking; the best were King of Siam and Miss A. Double. 3rd, Mr. C. W. BAYNES, gr. at Ryedale, Weybridge, of

which the best were King of Skun and Terra Cotta. There were five exhibits.

For bunches of spiders, plumed forms, in no fewer varieties than three, Mr. J. French, gr. to Mrs. Barclay, Ambleside, Wimbledon Park, was 1st. The best thread-like varieties were the only pleasing ones as observed in bunches; the varieties were Mrs. Fellows, canary-yellow florets, curving outwards; the white form of Jitsinetui; Mrs. Jas. Carter, palest yellow flower with straight florets; and Bonquetier, a pinkish yellow flower; White Thread, and Jitsinetui, the purple form. 2nd, Mr. A. Page, gr. to A. L. REYNOLDS, Esq., Ravenscroft, Moss Hall Grove, Finchley, whose best blooms were Cheveux d'Or, Miss Filkins, King of Plumes, Golden Thread and Alice Carter. There were six exhibits.

The class for miniature flowered varieties brought only two exhibits, that of Mr. W. C. PAGRAM, who was awarded the 1st prize; and of Mr. D. B. CRANE, 4, Woodrow Terrace, Archway Road, Highgate.

The large vase class brought some few good examples of arranging Chrysanthemums with the foliage of other plants. The 1st prize was awarded to Miss C. B. COLE, The Vineyard, Feltham. The Chrysanthemums consisted of yellow, white and rosy purple decorative varieties, mixed with Fern fronds, sprays of Myrsiphyllum and grass awns; 2nd, Mr. D. B. CRANE, with a pretty vase of chiefly white blooms, of good Japanese varieties, to which some would have given the 1st prize, and which certainly pleased us the better of the two; 3rd, Mr. J. Sandford, gr. to G. W. WRIGHT-INGLE, Esq., Woodhouse, North Finchley, whose bouquet consisted of white reflexed Japanese varieties, Fern fronds, and shoots of Codium, Asparagus trails, &c. There were nine exhibits in this class.

Mr. John French, gr. to Mrs. BARCLAY, showed the best basket of Chrysanthemums. The furnishing consisted chiefly of theadry varieties, contrasted with a few berried sprays of Solanum, Cratogeomys Pyracantha, grass awns, Codium, and Asparagus. Miss C. B. COLE was 2nd, with a basket filled with chiefly yellow, large flowered varieties, the handle being entwined with sprays of small leaved Ivy, burst seed pods of Iris pseudo-acorus, and the usual greenery; 3rd, Miss EASTHERBROOK, The Briars, Fawkham, Kent, thread and single varieties, chiefly. An extra prize was given to Mr. R. E. Newman, florist, Temple Street, Aylesbury.

AMATEURS.

The best collection of twelve Japanese blooms from an amateur was exhibited by Mr. W. Perrin, and it included some exceedingly bright flowers of fair size. The best were Etoile de Lyon, which had capital colour; G. J. Warren, Julia Scaramanga, Joseph Chamberlain, and C. W. Richardson, a narrow-petalled flower of pale yellow colour. Mr. N. Tipler was 2nd, and Mr. Jos. Childs 3rd. There were two unsuccessful exhibitors.

There were seven exhibits in a class for six Japanese blooms distinct, and the 1st prize was won by Mr. W. Trowell, gr. to DAVID LINK, Esq., Fairlight, Beckenham.

Special prizes were offered by C. W. Richardson, Esq., for the best collection of twelve Japanese blooms shown by single-handed gardeners. Mr. W. Tipler, gr. to Miss SMITH-DORRIEN, Hartwell Cottage, Aylesbury, won 1st prize, and included a fine bloom of Swanley Giant; 2nd, Mr. Jos. Childs, gr. to Mrs. Foss, Totteridge, Herts.

In Division B. the 1st prize for six bunches of any varieties was won by Mr. W. G. PRUDDER-CLARK, York Road, Hitchen.

The best large vase of Chrysanthemums, arranged with foliage, &c., to be shown by an amateur in Division A., came from Mr. W. C. PAGRAM, gr. to J. COURTENAY, Esq., The Whim, Weybridge; Mr. H. Pestell, gr. to F. S. WIGRAM, Esq., Elstow, Bedford, was 2nd.

MISCELLANEOUS PLANTS.

For a collection of flowering, berried and foliage plants, arranged for effect on a table space 9 ft. by 6 ft. (nurserymen excluded), the two following exhibitors were awarded equal first prizes: Mr. W. Howe, gr. to Lady TATE, Park Hill, Streatham Common, and Mr. A. Newell, gr. to Sir EDWIN SAUNDERS, Fairlaw, Wimbledon Common. The groups were very pretty in either case, and included most of the flowering plants now in season.

NON-COMPETITIVE EXHIBITS.

Mr. John Fleming, gr. to Lady PROCT, Wexham Park, Slough, showed a group of miscellaneous plants arranged for effect on the ground floor. It was a very large group, the plants of fine quality, and they were arranged in a charming manner. Amongst the plants we noticed were Poinsettias, Begonia Gloire de Lorraine, Astilbe japonica, Eriacis, Solanum capsicastrum, Calanthes, Lilium longiflorum, Lily of the Valley, Chrysanthemums, Bouvardias, Codium, Palms, Lilacs, Bamboos, Dracena Sanderiana, Cordylines, Primula sinensis, Narcissus, Cattleyas, Cypripediums, Cannas, Richardias, Ferns, Pancratiums, Roman Hyacinths, Freesias, &c. (A Large Gold Medal was awarded.)

Mr. NORMAN DAVIS, Framfield Nurseries, Sussex, had an exhibit on the ground level under the great organ, that occasioned unusual remark owing to the great size in blooms of Madame Carnot, G. J. Warren, and others. We have never seen such specimens, not even from Mr. Davis, who has succeeded with the Carnot family to a greater extent than any other cultivator. Amidst a ground work of Ferns, single blooms were displayed that were as prominent as a plant would be ordinarily. There were also fine blooms of Florence Molyneux, Mr. Barkley, Bonita (a new incurved), and Framfield Pink, a pretty decorative variety (Large Gold Medal).

Mr. H. J. JONES, Ryeodott Nursery, Hither Green, Lewisham, was awarded a Large Gold Medal for a group of Chrysanthemum plants and blooms, with a few Codiums, &c., interspersed with them. Some of the blooms, were displayed in large trumpet-shaped glasses. There were a fine lot of plants of the variety Jessie Cotte, a new Japanese, and of the variety Mrs. Tate, similar to the last one, but deeper in colour. Good blooms were shown of J. R. Upton, Nellie Perkins, very large Japanese pink-coloured flower with white centre; Vicar of Leatherhead, yellow Japanese; Sir Redvers Fuller, crimson, with rather short florets; Lewisham Belle, a reflexed flower of pale sulphur-yellow; Mrs. Tom Rand, purple Japanese with silver reverse; Mr. F. King incurved flower, &c.

MESSRS. H. CANNELL & SONS, Swanley, Kent, made one of their characteristic exhibits, and were awarded a Large Gold Medal. On one side of the table there were rows of Chrysanthemum blooms set up in good bunches, and relieved with Ferns, &c. The decorative and singular looking varieties as Lovely, Arachnoideum, Centaurea, Golden Eden, Mrs. Filkins, &c., were well represented, and there were also numerous exhibition varieties in company with them. Among these were good blooms of J. R. Upton (yellow Japanese); Raphael Collins, also yellow Japanese with incurving florets; Leslie Brunning, a large Japanese, deep rose-coloured, with white centre; General Pole-Carew, a Japanese with drooping florets, red with yellow centre; Duchess of Manchester, a sport from Mme. Bordin, and apparently pale sulphur yellow colour. The Cannas, at either end of the table and in pots, were as bright and beautiful as ever, and, the same remark applies equally to the zonal Pelargoniums, which were shown in great variety.

MESSRS. W. CLIBRAN & SON, Altrincham, Cheshire, exhibited blooms of about fifty varieties of single flowered Chrysanthemums. There were many that possessed merit, including Clibran's Ter a Cotta, Mrs. Pat Weather, a large white; Mrs. Charles Behrens, Miss Emily Hall, red, &c. Two of the varieties were given awards by the Floral Committee (Silver Gilt Medal).

Mr. HENRY LOVE, 1, Melville Terrace, Sandown, Isle of Wight, exhibited a number of cut flowers of seedling Japanese varieties, including one named H. Love, with crimson florets, and said to be a seedling from Madame Carnot. The Committee expressed a desire to see flowers of this variety on a future occasion.

MESSRS. A. W. YOUNG & CO., Stevenage Nurseries, Herts, were awarded a Large Silver Medal for a group of Cactaceous plants.

Mr. R. E. NEWMAN, 8 and 10, Temple Street, Aylesbury, exhibited Floral Designs (Silver Medal); and Mr. K. DROST, Richmond, sprays of Lilac in flower, forced from English grown plants.

Mr. JAS. WILLIAMS, 44, Oxford Road, Ealing, was awarded a Silver Medal for some decorative exhibits.

Mr. R. C. PULLING, Monkham's Nursery, Woodford Green, obtained a Gold Medal for a large exhibit in which decorative varieties of Chrysanthemums were very prominent, but a fine lot of exhibition sorts were also shown, some of which were displayed in large trumpet vases.

Mr. J. AGATE, nurseryman, Havant, exhibited nine beautiful blooms of the new incurved variety Frank Hammond, raised by Mr. W. Molyneux.

MESSRS. I. HOUSE & SON, Westbury-on-Trym, exhibited blooms of Violets in variety.

VEGETABLES.

FORCING RHUBARB SEEDLINGS.

THE actual forcing of Rhubarb is so simple there can be no need to describe it, but my wish is to point out the value of obtaining young roots for the purpose. Excellent forcing roots may be grown in two seasons from seeds sown in April. It is surprising how well plants raised from seed will force. I have tried seedlings by the side of roots obtained by division, and the seedlings have been earlier and stronger. There is an impression among many growers that varieties of Rhubarb will not come true from seed; such is not our experience, as it varies little if the seed is obtained from a good source. I am aware some varieties differ greatly, for instance the well-known Hawke's Champagne, is one of the best all-round varieties grown, but is smaller and poorer in colour in some soils. Rhubarb, like all other plants, well repays good culture, plants left in one spot for many years and not fed will naturally weaken and lose colour. This spring, there was a beautiful forcing Rhubarb shown at a Royal Horticultural Society meeting by Mr. Poupart, called Daw's Champion [see fig. in *Gardeners' Chronicle*, April 14, 1900], the results of crossing Victoria with Champagne; and this will be a great gain to growers for early supplies, as it has splendid colour, and superior size to the parents, the colour being a bright red. Our earliest Rhubarb in the north is the Sutton, a variety

raised by the well-known Reading firm; this forced by the side of Champagne is quite a fortnight earlier, and has a bright rich colour, giving stalks a fair length and thickness. I have not tried this variety from seed, but have grown Royal Albert; this is a good early variety, and though not so large as some, is of first rate quality. For forcing purposes it is advisable to rely upon young roots, as these give the finest stalks. I do not say that only seedlings will do this, for roots obtained by division from eyes, and specially grown, will give splendid crops. Seedlings ripen up their crowns earlier than roots obtained by division, and this is a great gain, either for forcing or for affording early supplies from the open ground. When sowing seeds, it is essential to sow thinly, or about 9 to 12 inches apart in the row, and giving ample food in the shape of manures as a mulch the next season.

G. Wythes.

MARKETS.

COVENT GARDEN, DECEMBER 6.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. ED.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s.	d.	s.	d.		s.	d.	s.	d.
Adiantums, p. doz.	5	0	7	0	Ferns, small, per				
Arbor-vitæ, var., doz.	6	0	36	0	100	4	0	6	0
Aspidistras, p. doz.	18	0	36	0	Ficus elastica, each	1	6	7	6
— specimen, each	5	0	10	6	Foliage plants, var.,				
Cannas, per dozen	18	0	—	—	each	1	0	5	6
Orotans, per doz.	18	0	30	0	Lily of Valley, each	1	2	3	0
Cyclamen, per doz.	8	0	10	0	Lycopodiums, doz.	8	0	4	0
Dracenas, var., per					Marguerites, per				
dozen	12	0	30	0	dozen	8	0	12	0
— viridis, per doz.	9	0	18	0	Myrtles, per dozen	6	0	9	0
Ericas, var., per doz.	12	0	36	0	Palms, various, ea.	1	0	15	0
Eucynymus, various,					— specimens, each	21	0	63	0
per dozen	6	0	18	0	Pelargoniums, scar-				
Evergreens, var.,					let, per dozen	8	0	12	0
per dozen	4	0	18	0	— Ivyleaf, per doz.	8	0	10	0
Ferns, in variety,					Spiraeas, per dozen	6	0	12	0
per dozen	4	0	18	0					

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus "Fern,"					Maldenhair Fern,				
bunch	1	0	2	0	per doz. bunches	4	0	8	0
Carnations, per doz.					Marguerites, p. doz.				
blooms	1	0	2	0	bunches	2	0	4	0
Cattleyas, per dozen	9	0	12	0	Mignonette, per doz.				
Eucharis, per dozen	2	0	4	0	bunches	4	0	6	0
Gardenias, per doz.	1	6	2	6	Odontoglossums, per				
Lilium Harrisii, per					dozen	6	0	9	0
dozen blooms	4	0	6	0	Roses, Tea, white,				
Lilium lancifolium					per dozen	1	0	3	0
album, per dozen					— Safrano, per				
blooms	1	6	3	0	dozen	1	0	2	0
Lilium rubrum, per					— Catherine Mer-				
dozen	3	0	5	0	met, per dozen	3	0	6	0
Lilium longiflorum,					Smilax, per bunch	3	0	5	0
per dozen	4	0	6	0	Tuberose, per doz.				
Lily of Valley, per					blooms	0	3	6	6
doz. bunches	6	0	12	0					

FRUIT.—AVERAGE WHOLESALE PRICES

	s.	d.	s.	d.		p.	d.	s.	d.
Apples, English,					Grapes, Musc., A. lb.	3	0	4	0
per bushel—					— B. per lb.	1	9	1	0
cookers, large	2	6	4	0	— Almeria, bcis	16	0	2	0
various	1	6	3	0	Lemons, case	8	0	1	0
Cox's, in sieves	3	0	5	0	Lychees, new, pkt.	1	3	—	—
Kings, bush	3	0	4	0	Medlars, case	2	0	—	—
Blenheims, bush	3	0	5	0	Oranges, Teneriffe,				
Ribbons, bush	4	0	6	0	case	2	6	4	0
— Nova Scotia,					— Murcia, case	7	6	—	—
per barrel	12	0	18	0	— Tangerine, box	0	6	1	2
— Californian, per					— Jaffa, case	10	0	—	—
box	7	0	10	0	Pears, home grown				
Bananas, bunch	7	0	12	0	in sieves	3	0	4	0
— loose, per doz.	1	0	1	6	— stewing, crates	4	6	1	6
Cobnuts, lb.	0	5	—	—	— Californian, half				
Cranberries, case	15	0	—	—	case, and Glout				
— quart	0	7	—	—	Moreau	10	0	12	6
— Russian kegs	1	9	—	—	— French, Glout				
Chestnuts, per bag	8	0	14	0	Moreau, crates	7	0	6	6
— Italian,	14	0	17	0	Persimmons or Kaki,				
Custard Apples,					per doz.	2	0	5	6
dozen	3	0	6	0	Pines, each	1	3	1	6
Grapes, Alicante,					Sapucaia nuts, lb.	1	3	—	—
per lb.	0	8	1	3	Walnuts, Grenoble,				
— Colmar, A	1	6	1	3	per bag	6	0	6	6
— C. Imar, B	0	8	10	—	— in bags, large	10	0	12	6

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	3 0 —	Leeks, per dozen bunches	1 6 —
— Jerusalem, sieve 1 0-1 6		Lettuce, French Cabbage, doz.	1 3 1 10
— Stachys or Chinese per lb.	0 6-0 8	Mint, per doz.	—
Beans, dwf. Madeira, per bkt.	3 0-4 0	Mushrooms, house, per lb.	0 6-1 0
— Ch. Islds. and home, dwf., new, per lb.	1 0 —	Onions, picklers, per sieve	3 0 —
— French, pkts.	0 8-0 9	— per bag	3 0-3 6
Betroot, bushel.	1 6-1 8	— cases	6 0-7 0
Beet, per dozen	0 6 —	— English, p. cwt.	—
Brussels Sprouts, per sieve	0 6-1 3	Parsley, 12 bunches	1 0-1 6
Cabbage, tally	0 6-1 6	— per sieve	0 6-0 9
— dozen	0 6 —	Parsnips, in cwt.	—
Carrots, 12 bunches	1 6 —	— bags	2 6-3 0
— washed, in cwt.	—	Potatoes, per ton	75 0 100 0
— new bunch	2 0-2 6	Radishes, per 12 bunches	1 0 —
Gaulthier, per dz.	1 0-2 0	Rhubarb, Yorks, doz.	2 6 —
— tally	6 0-9 0	Salad, small, punnets, per dozen	1 3 —
Celeriac, per dozen	1 2-2 0	Savoy, per doz.	0 6-1 0
Celery, doz. bndls.	12 0-15 0	— per tally	2 0-2 9
— unwashed, doz.	7 0-12 0	Shallots, new, p. lb.	0 2 1/2
Chicory, per lb.	0 3 —	Spinach, persieve	0 6-0 9
Cress, doz. punnets	1 0 —	— bushel	1 0-2 6
Cucumbers, doz.	3 0-8 0	Tomatoes, English, new, per 12 lb.	4 0-5 0
Endive, new French, per dozen	1 0 —	— Canary deeps	2 6-4 0
— English, score	1 0 —	Turnips, per dozen	1 6-2 0
Garlic, new, lb.	0 3 —	— in bags	1 6-2 0
Horseshoe, English, bundle	1 6-2 0	Watercress, p. doz.	—
— foreign, o. bdl.	0 9-1 0	— bunches	0 4-0 6
— loose, per doz.	1 9 —		

REMARKS.—So ne crates of Mistletoe are now on sale. Yorkshire Rhubarb has begun to arrive; Spinach is improved in price; some Strawberries were on sale lately at 2s. to 3s. per lb., but they had not much colour. The prices of English Apples remain much the same as at the time of our last report. Custard Apples are selling at from 3s. to 6s. per dozen.

POTATOES.

Various sorts, 75s. to 100s. per ton; foreign bags, 50 kilo., 2s. 9d. to 3s. 9d.; Dunbars, 130s. John Bath, 32 & 34, Wellington Street, Covent Garden.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending December 1, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.	1900.	Difference.
	s. d.	s. d.	s. d.
Wheat	25 7	27 0	+ 1 5
Barley	26 10	25 9	- 0 1
Oats	16 6	17 2	+ 0 8

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period November 25 to December 1, 1900. Height above sea-level 24 feet.

1900.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				RAINFALL.	TEMPERATURE OF THE SOIL AT 9 A.M.				LOWEST TEMPERATURE ON GRASSES.								
		At 9 A.M.		Day.	Night.		At 1-foot deep.	At 2-feet deep.	At 4-foot deep.										
		Dry Bulb.	Wet Bulb.																
		deg.	deg.	deg.	deg.		ins.	deg.	deg.	deg.		deg.							
		SUN. 25	S.S.W.	49°	14°		9°	53°	6	42°		7	44°	3	47°	0	50°	5	40°	6
MON. 26	S.S.E.	40	0	39°	7	51°	3	37°	4	0°	03	44°	4	47°	2	35°	0		
TUES. 27	S.S.W.	41°	5	40	2	51°	7	40	2	0	09	45°	1	47°	4	50°	35	0	
WED. 28	S.S.E.	46	4	45°	2	48°	1	41	0	20	44°	6	47°	2	50°	1	30	2	
THU. 29	E.S.E.	44	9	42°	7	47°	8	43°	6	0	01	45	3	47°	2	50°	0	39	2
FRI. 30	N.N.E.	42	9	41°	1	46	4	32	5	...	45	3	47°	2	50°	0	34	6	
SAT. 1	E.N.E.	42	5	41°	9	43	6	41	2	00	44	5	1	47°	4	49°	9	39	2
MEANS...	...	43°	9	42°	7	48°	9	41°	2	0	37	44°	9	47°	2	50°	2	35°	3

Remarks.—The weather during the first part of the week was bright and warm, the latter part being dull, especially on Saturday, when it was very dark between the hours 10 A.M. and 2 P.M. Rain fell on five days.

GENERAL OBSERVATIONS.

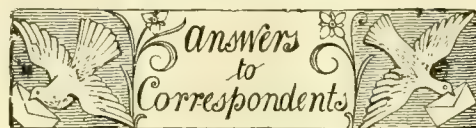
The following summary record of the weather throughout the British Islands, for the week ending December 1, is furnished from the Meteorological Office:—

"The weather was very dull and unsettled generally, with humid air and frequent rain in all parts of the kingdom.

"The temperature was above the mean in almost all districts, the excess varying from 1° in England, S.W. to 2° or 3° elsewhere. In Ireland, S., however, the weekly value was slightly below the normal. The highest of the maxima were recorded during the earlier days of the period, and ranged from 56° in the Channel Islands, and 55° in England, S., to 49° in Scotland, N. The lowest of the minima were registered as a rule on November 28, when the therm. meter fell to between 24° and 32° in Scotland, to 29° in Ireland, and to between 29° and 34° over England. In the Channel Islands the lowest reading was 36°. The diurnal range, with few exceptions, was very slight.

"The rainfall was less than the mean in Scotland, N. and W., England, E. and N.W., and just equal to it in the Midland Counties and England, S. In England, N.E., Scotland, E., England, S.W., the Channel Islands, and over Ireland, however, there was a slight excess, while that in Ireland, S., was very large.

"The bright sunshine did not differ much from the mean value over the kingdom as a whole; the percentage of the possible duration ranged from 30 in the Channel Islands, and 25 in England, S.W., to 11 in Scotland, E. and Ireland, N., and to 10 in Scotland, N. and England, N.E."



BANANAS AND COOL TEMPERATURES: H. T. M.

The bunches of fruits will ripen slowly in a minimum warmth of 55°, either on the plant or when cut and hung up. It is in the latter manner that the wholesale fruit dealers allow the perfectly unripe fruits to mature. The chief danger of a low degree of warmth is in its effects on the health of the plant, but with 55° as the lowest degree no harm will be done.

CACTACEÆ: J. C. Echinocystanthus is synonymous partly with Cereus, partly with Echinocactus. Cephalocereus, Cephalophorus, and Ciriosum are all referred to Cereus in the Index Kewensis.

CYCLAMEN: Constant Reader. Weevil grubs. Trap them with slices of Potato or Carrot.

FUNGUS IN SOIL: W. F. S. A species of Peziza. We would not advise you to use the soil in the Vine-border.

GARDENERS' BENEFIT SOCIETIES: One who wants to know. United Horticultural Benefit and Provident, Secretary Mr. W. Collins, 9, Martindale Road, Balham, S.W.; Gardeners' Royal Benevolent Institution, Secretary Mr. G. J. Ingram, 175, Victoria Street, Westminster, S.W.

INSECTS: E. S. We find no insects in the box. Perhaps the roots of your Orchid are eaten by cockroaches.

MAGNOLIA FRUITS: W. H. D. We have received fruits of M. Soulangiana from various sources.

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can consistently with our editorial work, but as the naming entails much labour and considerable cost we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay is often unavoidable.—J. M. 1, Margil; 2, Scottish Bridget, this was at one time a favourite Apple in the north of England; 3, Hunthouse; 4, Winter Quoining; 5, Unknown; 6, Hubbard's Pearmain.—W. D. 1 and 3, rotten; 2, Crassane; 4, a small example of Striped Beeding; 5, Irish Reinette; 6, Reinette Grise.—W. R. F. Beurré Clairgeau.—R. S. W. 1, Cobham; 2 and 3, not sufficiently developed for determination; 4, Reinette Verte; 5, Dumelow's Seedling; 6, Rhode Island Greening.—T. W. 1, Gilgill; 2, Louis Grégoire; 3, Passe Colmar; 4, Beurré d'Aremberg; 5, Golden Russet; 6, probably a

local variety.—F. B. A small example of Catillac.—A. McC. 1, Cox's Pomona; 2, Lodington.—Caledonia. We believe your Apple is the true Golden Reinette, which is superior to that under this name in some collections.—F. G. B. The Apple is Caroline. It is often confounded with Queen Caroline, which also appears in some lists as Spencer's Favourite, and Brown's Codlin.—Totteridge. Pear Bonne De Ezée, more generally known as Brockworth Park.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—J. F. Cypripedium tonsum and Epidendrum cochleatum.—J. T. Lycaste Skinneri.—C. H. P. 1, Jasminum revolutum; 2, Stauntonia latifolia, so far as we can judge without seeing flowers.—P. B. 1, Adiantum pubescens; 2, A. formosum; 3, Myrtus microphyllus; 4, Liparis longipes.

RUST ON CHRYSANTHEMUMS: W. W. Burn the plants as soon as possible, and get cuttings from a healthy stock.

SEQUOIA GIGANTEA (WELLINGTONIA): T. A. This species of Sequoia bears male and female cones on trees in this country. The female cones are ovoid obtuse both at base and apex, from 2 to 2½ inches long, and about 1½ inch broad in the widest part. The number of seeds on each scale varies from five to nine. The male catkin is about an inch in length. The seeds will be fertile if your tree which carries them bore male flowers. You will find much information about this tree in A Manual of Conifers, by Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, and also scattered through the pages of this journal since December 24, 1853, at which date Lindley published his description of the tree.

TACSONIA FAILING TO BLOSSOM: W. P. These plants flower on the stronger of the annual growths, and the better practice is to cut out some of the older parts of the bine, laying in an equal or greater number of strong young growth, tipping them to induce laterals to push. All other shoots of one year's growth should be spurred in to an inch in length. Do not let the plants form a tangle of shoots, but thin them a little, and let the finer ones hang free from each other. The border or tub in which the plant is grown should contain plenty of nutriment, and the present is a suitable season to attend to this matter. Let the drainage material be efficient, but not excessive in amount; make the soil fairly firm, and in the height of the season afford mild manure-water or manurial dressings occasionally, but do not afford this sort of assistance after July, or the growth will be extended to too late a date, and will not ripen sufficiently to flower satisfactorily. Do not afford shade to the plant at any time, and let it occupy a sunny situation. The plant never burns.

VINES AND WINE-MAKING: A. D., Warriston Lodge. A good, useful book that deals with the diseases of the Vine and their remedies, is Vines and Vine Culture, by Mr. A. F. Barron, late Superintendent of the Royal Horticultural Society's Gardens. To be had from him at 13, Sutton Court Road, Chiswick. About "Wine-making," enquire at the Bazaar Office, 170, Strand, London, W.C.

VINEYARD VARIETIES OF GRAPE-VINES: F. Welstead. You would doubtless obtain them by advertising in our pages. These Vines are grown in a few private places, but we are not aware that the owners dispose of cuttings or plants.

WHOLESALE SEEDSMEN, BAG-MAKERS, &c.: A. B. We cannot undertake to recommend traders. You should scan our advertisement columns, or advertise your needs in this journal.

COMMUNICATIONS RECEIVED.—A. H. B.—M. S.—H. J. E.—N. E. Br.—A. W.—L. B.—W. S.—E. C.—W. C.—M. E. M.—Sir Trevor Lawrence.—H. Turner.—G. M. Teddington.—H. P.—H. C.—A. B.—H. E. S.—W. N.—W. J. W., Somersetshire, should have been sent earlier, we will do our best.—Constant Reader.—W. Boyce.—Admitt & Naunton.—Jas. Thorpe.—Amateur (most of them are decayed).—A. P.—H. Canell.—D. T. F.—A. & B., Ltd.—H. W. T.—S. A.—D. R. W.—J. O'B.—H. M.—E. R.—B.—Ignoramus.—R. Smith.—Market Gardener.—W. H.—C. T. D.—H. W. W.—B., Midlothian.—A. W. G.—R. D.—B. W. B.—C. W. D.—E. S.—G. D. W.—J. H.—S. W. F.

(Remainder of Markets carried forward to p. x.)



THE BANANA-HOUSE AT PADDOCKHURST (SIR WEETMAN PEARSON, BART., M.P.).



THE

Gardeners' Chronicle

No. 729.—SATURDAY, DEC. 15, 1900.

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THE WHEAT CROP OF 1900.

[To the Editor of the GARDENERS' CHRONICLE.]

AN estimate of the average yield of Wheat per acre in the United Kingdom has been made at Rothamsted for each year (with one exception) from 1852 up to the present time, founded on the produce on selected plots in the experimental Wheat-field which has now grown the crop for fifty-seven years in succession, from 1843-4 to 1899-1900 inclusive. Further, commencing with 1863, such an estimate has been issued annually. With the death of Sir John Lawes it would seem not inappropriate that the annual publication should be discontinued. It happens, however, that Sir John watched very carefully the progress of growth of the crop this year up to harvest, and frequently commented on its indications; and as the meteorological and statistical data have been got together, I have decided to draw up the results for publication in the usual form. It is, it is true, later than desirable, but absence from home, and full engagements when at home, have rendered it impossible for me to take up the subject sooner. Obviously, too, it is quite impossible to make any promises for the future.

Referring to the Wheat crop of 1900, the first point to consider is—what were the characters of the season which grew it? The greater part of September (1899) was warmer than average, with a considerable deficiency of rain; then followed several weeks of lower than average temperature, with, at the end of September and the beginning of October, a considerable excess of rain leading to drainage from the pipes in the experimental Wheat-field. With the exception of a cold period about the middle of December, the temperature ranged unusually high from the last week in October to nearly the end of January; and after the excessive rain early in October, there

was a period of dry weather favourable for working the land and getting in the seed; but again, at the end of October, and in the beginning of November, there was a great excess of rain, with considerable drainage from the experimental plots. Then followed a period from the middle of November to nearly the end of December of considerable deficiency of rain, succeeded then and early in January by excess of rain and drainage from the pipes. Lastly, on this point, there were, with little exception, lower than average temperatures to the end of March; and there was a great excess of rain and much drainage from about the middle of February to early in March. The significance of so much autumn and winter drainage will be seen as we proceed.

With the exception of some warm intervals in April and the beginning of May, there was from early in March to the end of May considerably lower than average temperature, with, at the same time, great deficiency of rain. From that time, however, the temperature was, with the exception of short intervals, considerably over average almost up to harvest, with great deficiency of rain up to nearly the end of July, though there was a fair amount towards the end of June. There was, in fact, considerable deficiency in March and April, much greater deficiency in May and July, but a slight excess in June. In August, with again prevailing high temperatures, there was considerable excess of rain.

Such were the conditions of the weather at Rothamsted which gave the crop of 1900. We have next to consider what was the amount and character of the produce on the experimental plots. The following table gives, in the usual form, the produce of the selected plots in the past season, which was the fifty-seventh year of the successive growth of the crop on the same land. It also gives, for comparison, the average produce of the same plots over the preceding ten, thirty-eight, and forty-eight years, 1852-99, inclusive:—

Years.	Unmanured Plot 3.		Farmyard Manure, Plot 2.		Artificial Manures.					Mean of Plots 3, 2, and 7, 8, 9 (or 10)
	Plot 3.	Plot 2.	Plot 1.	Plot 8.	Plot 9 (or 10)	Plot 4.	Plot 5.	Plot 6.		
BUSHEL OF DRESSED GRAIN, PER ACRE.										
Present year, 1900	...	12½	33½	29½	44	34½	36½	27½*		
Averages :—										
10 years, 1890-99	...	12½	41	33½	37½	33½	35	29½†		
38 years, 1852-89	...	13	34	32½	36½	36½	35½	27½‡		
48 years, 1852-99	...	12½	35½	33	36½	35½	35½	27½§		
WEIGHT PER BUSHEL OF DRESSED GRAIN IN POUNDS.										
Present year, 1900	...	60½	61½	60½	60½	60½	60½	60½		
Averages :—										
10 years, 1890-99	...	60½	61½	61½	61½	60½	61½	61½		
38 years, 1852-89	...	58½	60½	59½	59½	59	59½	59½		
48 years, 1852-99	...	58½	60½	60½	59½	59½	59½	59½		
TOTAL STRAW, CHAFF, &C., PER ACRE, CWTs.										
Present year, 1900	...	9	33½	26½	39½	34½	33½	25½		
Averages :—										
10 years, 1890-99	...	9½	41½	34½	43½	36½	38½	29½		
38 years, 1852-89	...	10½	31½	33½	40½	41½	38½	27		
48 years, 1852-99	...	10½	33½	33½	40½	40½	38½	27½		

* Equal to 27½ bushels at 60 lb. per bushel.

† Equal to 30½ bushels at 60 lb. per bushel.

‡ Equal to 27½ bushels at 60 lb. per bushel.

§ Equal to 27½ bushels at 60 lb. per bushel.

The table shows that without manure there was rather less grain, and also less straw, than

over the preceding ten years, and in a greater degree less than over the earlier periods. The farmyard manure, with its great accumulations, gives nearly 8 bushels less grain than the average of the preceding ten years, and more than 2 bushels less than the average of the forty-eight years. There was also nearly 8 cwt. less straw than the average over the preceding ten years, and slightly less than over the forty-eight years. Turning to the results on the three artificially-manured plots, plot 7, with full mineral manure and 86 lb. of nitrogen as ammonium salts, gives between 3 and 4 bushels less grain, and from 7 to 8 cwt. less straw, than over either of the preceding periods. Plot 9 (or 16) again, with the same mineral manures, and the same amount of nitrogen as plot 7, but as nitrate of soda instead of ammonium salts, and all sown in the spring, gives about 5 bushels more grain, and over 8 cwt. more straw, than plot 7, though less straw than over either of the preceding periods. Lastly, plot 8, with the same mineral manures as plots 7 and 9, but with an excessive amount of nitrogen as ammonium salts, gives the large produce of 44 bushels of grain, which is more than 6 bushels over the average of the preceding ten years, and more than 7 bushels over the average of the forty-eight years. Further, it gives not much less straw than the average of the preceding periods. The general result is, then, that without manure, with farmyard-manure, and with two of the artificial manures, there was more or less deficiency of both grain and straw compared with the average produce of the plots; whilst on plot 8 alone, with an excessive amount of nitrogen as ammonium salts, there was more than average produce of grain, and nearly average produce of straw. How is this to be explained?

Attention has been called to the frequent and considerable autumn and winter drainage from the plots, and analysis of the drainage waters has shown that they contained considerably higher than average amounts of nitrogen as nitrates. Even the farmyard-manure plot, which, owing to its greater porosity and absorptive capacity, gives pipe drainage very seldom compared with the artificially-manured plots, in this season gave drainage far richer in nitrates than in the average of seasons. Again, comparing the composition of the drainage of plot 7 with that of plot 15, the two plots receiving the same amount of ammonium salts, only one quarter of which, however, is applied to plot 7 in the autumn, and the remainder in the spring, whilst on plot 15 the whole is applied in the autumn. The result was, that the total autumn and winter drainage showed a loss of nearly twice as much nitrogen as nitrate from plot 15 as from plot 7. Accordingly, the produce of plot 15 (which is not given in the table) showed 9½ bushels less grain, and more than 8 cwt. less straw than plot 7, with the less loss by drainage. It has been shown, too, that there was considerable reduction of produce, both with farmyard-manure, and on plot 7 and 9 (or 16), due to loss of nitrates in the autumn and winter drainage. The effect of this was evident in the restricted winter and early spring growth.

Then followed, as has been stated, first a period of low temperatures and great deficiency of rain, and afterwards considerably over-average temperatures with great deficiency of rain up to the end of July, continuing the condition of restricted growth almost up to the ripening period. The crops were, indeed, prematurely ripened, though aided somewhat by

the rains of the last week of July and the beginning of August. Nevertheless, the grain was small, and showed the characters of "strength" rather than of adequate starch accumulation. The weight per bushel was in every case lower than the average of the preceding ten years, but higher than that of the forty-eight years. The general result was very short straw crops, and deficient yield of grain, excepting in the case of plot 8, with the excessive amount of ammonium salts. This latter result is quite consistent with the supposition that in the other cases there had been loss by drainage in the autumn and winter, and defective action of the nitrogenous manures in the spring and early summer, when only applied in moderate amount; whilst with the excessive quantity enough became available under the conditions of drought and heat of the spring and early summer; and under the same conditions the crop, which usually is laid, stood up well, and so yielded a high amount of grain.

The next question to consider is—how far the climatic conditions and the characters of the crop were similar in the chief wheat-growing districts of the country? The Meteorological Office records show that in the eastern, midland, and southern districts there was, as at Rothamsted, an excess of rain at the end of September and at the beginning of October, a considerable excess towards the end of October and the beginning of November, at the end of December and the beginning of January, and a great excess in the latter half of February. In the north-east of England there was also considerable excess about the first, third, and fourth of the above periods; and in the east of Scotland at the end of September, early in November, at the end of December, and the beginning of January, and towards the end of February. There was, in all probability therefore, loss of nitrates by drainage in the autumn and winter in the chief wheat-growing districts of the country, as well as at Rothamsted; whilst later in the season there was generally, as at Rothamsted, over average temperature, with great deficiency of rain up to the middle or end of July; leading to premature ripening in some southern districts, whilst in the north the later crops suffered more from rain at the ripening period.

Quite consistently with the above, the published records of the Wheat crop, especially in the eastern, midland, and southern districts of the country, show it to have been short in straw, and very generally only average or under average, and but seldom over average, in yield of grain. Further north the records are rather more favourable.

Whether the crop of the country as a whole suffered less or more in its early stages from loss by drainage, and later from drought and heat, than the Rothamsted figures indicate, may be a question. Further, as the Rothamsted average is influenced by the unusually high produce of plot 8 (44 bushels), which would be only reached in the country at large in the case of some soils in high condition, the figure arrived at would, so far, be probably too high rather than too low. But as the area under the crop is unusually low, and the yield per acre is also low, it would make little difference in the estimate of the requirements from stocks and imports whether the actual figures obtained, or a somewhat lower or higher one were adopted. Taking, however, the figures as they stand, the result would be as follows:—The average of plot 3, plot 2, and the mean of the three artificially-manured plots, indicates a produce of 27½ bushels, at 60½ lb. per bushel; which, reckoned at the official weight of 60 lb., gives an average of 27½ bushels. The area under Wheat in the United Kingdom was only 1,898,839 acres, or lower than has been reached in any years excepting 1895 and 1896. Assuming this area to have yielded an average of 27½ bushels per acre, at 60 lb. per bushel,

the gross produce of the country would be rather more than 6½ million quarters (6,556,928). Deducting from this 2 bushels per acre for seed, the estimated available home produce would be rather over 6 million quarters (6,082,218). The average population for the current harvest year is estimated at 41,168,808; and taking the consumption per head at 6 bushels of 60 lb. per bushel, the total requirement for the harvest year would be nearly 31 million quarters (30,876,606). Deducting from this the available home produce (6,082,218 quarters), the requirement from stocks and imports would be about 24½ million quarters (24,794,388). *J. Henry Gilbert, Harpenden, December 5, 1900.*

ORCHID NOTES AND GLEANINGS.

CATLEYA BOWRINGIANA.

WE have a plant which is now going out of flower. It has been very lovely this year, for it carried eighteen flower-spikes which bore 165, and one bearing fifteen blooms. I do not know if others have noticed the peculiarities of colouring presented at various times of day and night, being of an electric tint as the day comes, and growing paler towards evening. In the moonlight it is very weird. The culture required differs in a few details to that of most Catleys. The roots of this species are comparatively small, and the pieces of peat, sphagnum-moss, and crocks ought also to be small, and on potting a plant these should be fitted into their places with moderate firmness; the drainage of the pot or basket must be perfect. This species does not seem to require a long period of rest, but merely a curtailment of the supply of water during the season of flowering, up to which time it requires abundance, from about the end of the month of March. From the time of flowering until March it should be carefully watched, as its requirements in the matter of moisture depends on the conditions prevailing in the house and the state of the weather. Charcoal should be freely used in the potting-compost, and this substance, if ground to a powder and spread upon the top of the pot, will keep the compost sweet. The use of manure in any form is not to be recommended; mild ammoniacal fumes do good. *H. W. T., Cornwall.*

MALFORMED CYPRIPEDIUM.

We are indebted to Sir Trevor Lawrence for a flower of *C. Ashburtoniae* showing the following peculiarities:—At the back of the flower were two "standards" instead of one; in front there were two sepals conjoined as usual, so that there were four sepals in all. Within these were two lateral petals and a lip. The column, instead of bearing one central staminode, bore two, placed laterally, and representing apparently A2, A3. The two fertile stamens, al a2, were also present. The stigma was three-lobed, although the ovary was one-celled, with four parietal placentas.

NOVEMBER NOTES FROM THE SOUTH-WEST.

(Continued from p. 421.)

CONVOLVULUS Cneorum has given an autumnal flowering, and *Coreopsis grandiflora* still shows a few scattered blooms of bright gold. *Crinum*s, in sheltered nooks, continued their blooming until the second week of November, when the autumn *Crocuses* were gay with flower, such species as *C. lævigatus*, *C. ochroleucus*, *C. pulchellus*, *C. p. albus*, *C. sativus*, and *C. tingitanus*, affording an effective display. *Cactus Dahlias*, though not emulating their October brilliance, carried flowers in ever-lessening numbers until the third week of the month; while here and there a stray blue spire of *Delphinium*, or wide-spread yellow star of *Doronicum*, gave a spot of colour. The little Mexican Daisy (*Erigeron mucronatus*), after six months of uninterrupted blossoming, is still producing its modest blooms; and *Erigeron speciosus* provides a few infrequent flower-heads, whose pale

lavender scarcely recalls their deeper hues of early summer. *Fuchsias*, both of the hardier species and also florists' varieties, retained their beauty through the greater part of November, and perennial *Gaillardias*, *Gazanias*, *Gentiana acaulis*, and *Geranium sanguineum*, contributed sparsely to the flowers of the month. The *Heliotrope* is still in bloom, and, in the first week of November, I saw, growing and flowering freely against a house-wall, an old specimen that had been planted fifteen years, and had attained a height of over 10 feet.

With the commencement of the month, the giant Christmas Rose (*Helleborus altifolius*) opened the first of its white chalice, while *Iris stylosa* began to bloom ere October had departed, accompanied by the even more beautiful *Iris alata*. *Kniphofias*, *Mesembryanthemums*, *Paris Daisies*, and *Pentstemons*, have borne a few flowers; and *Physalis alkekengi*, and its nobler relative *P. Francheti*, have flaunted their gorgeous calyces of polished orange-scarlet. Roses of the Tea section, especially where grown on southern walls, have given a scant gathering of half-expanded blossoms, and the white Macartney Rose was flowering freely in the opening days of the month, while the Japanese Rose was studded with its large, scarlet hepa. *Salvia coccinea*, *S. splendens*, and *S. Pitcheri*, have been in bloom, all three, as well as *S. patens*, being practically hardy in sheltered gardens. *Scabiosa caucasica* has borne a few exquisite blossoms of palest porcelain-blue, and the Winter Flag (*Schizostylis coccinea*) has perfected its crimson flower-spikes. *Senecio pulcher* has also been in bloom, while *Sternbergia lutea*, *S. l. major*, and the fine *S. macrantha* were also in evidence at the beginning of the month, at which time *Stokesia cyanea* was at its best, and, in a garden replete with floral treasures, a good clump of *Tricyrtis hirta* was in flower. The Periwinkles add to the list of November flowers, *Vinca acutiloba* being charming, with its wealth of pale grey-blue blooms; and the common *V. minor*, its double variety, suggesting in its appearance a *Marie Louise Violet*, and the white form, contributing to the somewhat meagre number of flowers of the open air. Violets are in bloom, and in sunny, southern exposures will continue to flower throughout the winter, unless checked by severe frosts; while *Zauschneria californica* still retains the remnants of its scarlet bloom-scapes.

Annuals, though their breadths of colour are reduced to spots, aid to no small extent in redeeming the dim November days from the reproach of being destitute of flowers. *Cosmos bipinnatus*, when planted in strong, rich soil, that encourages vigorous growth, often fails to expand its first blooms before the advent of the month, while, in a tour through neighbouring gardens, *Antirrhinums*, *Corn-flowers*, *Eschscholtzias*, *crimson Linum*, blue *Lobelia*, *Marigolds*, *Mignonette*, *Salpiglossis*, *Stocks*, *Sweet Peas*, *Sweet Sultans*, and early *Wallflowers*, may be noted in bloom.

CHRYSANTHEMUMS.

Cottage gardens have been gay with *Chrysanthemums*, though occasionally, even among the hardy varieties employed, traces of the dreaded "rust" are discernible. For garden effect, many of the older kinds are not to be surpassed, such as the rich crimson *Julie Lagravère*, the deep golden *Jardin des Plantes*, *Golden Christine*, its yellow merging into orange and chestnut; the silvery-flesh *Hiver Fleuri*, the orange-brown *Source d'Or*, the white *Elaine* and *Madame Lacroix*, and *Cottage Pink*.

SHRUBS, &c.

Not a few flowering shrubs and climbers cheer this dull season of the year with their blossoms. *Abelia rupestris* is still studded with a fair sprinkling of small flesh-white blooms; *Abutilon vexillarium* holds its crimson and yellow flowers, and, early in the month, a fine plant of some florist's *Abutilon*, which had reached the eaves of the house, was bearing in the open air a quantity of large blossoms. *Cassia corymbosa* still holds its yellow flowers on a southern wall; and *Cobaea scandens* spreads its deep purple blooms over cliff-face and building.

Colletia cruciata has its thorn-armed branchlets thickly dusted with countless, minute, white blossoms; *Correas* are in flower, and *Cotoneaster microphylla* is crimson with its myriad berries; while *Choisya ternata* and *Cytisus racemosus* are here and there showing flower. *Elaeagnus macrophylla* is bearing its sweetly-scented bloom-clusters, and a form of *Escallonia rubra*, with pinkish-white blossoms, continues to flower; as does *Eupatorium*

nudiflorum have commenced to star its leafless shoots; and against a white-washed cottage-wall the orange-yellow flowers of the double *Kerria japonica* yet gleam. On northern exposures the white and rose-coloured *Lapageria's* waxy bloom-trails hang in unmarred perfection; and the great standard *Magnolia grandiflora* bore a solitary, ivory-white chalice when November had entered its second week. The *Passion-flowers* are bright with

thick leafage. Some of the shrubby *Veronicas* are flowering, and, now and again, a belated bloom-spoke of *Yucca gloriosa* attracts the eye. *S. W. F., South Devon.*

PEDIGREE GRAPE - VINES. OLD AND NEW.

WE sadly want a "stud book" among our Grape-vines on the careful lines of our best pedigree farm stock. Any successful effort to establish such in these epoch-making times in horticulture, could hardly fail to prove of great practical use. It should help us to locate and discover all the best of our old Vines, and to use them as a test for comparison before admitting new Vines as new, or better than they. For this purpose, the "stud Vine-book" should be made as near as can be a reliable history of past Vines, and the latest up-to-date record of new Vine-making from the crossing of new Vines, with the fullest facts of the parentage of the latest new varieties of the Vine.

New Vines with neither pedigree nor parentage would then be received with doubt and suspicion. Too much caution can hardly be exercised in receiving and weighing the evidence brought to support the alleged origin of varieties. The time seems opportune for establishing a special committee for preserving all our best old Vines, and making it certain that no new variety of Grape-vine without a stated pedigree shall receive Certificate of Merit or other award. [Unfortunately, there are very few. Ed.].

¶ Possibly a small sub-committee might be formed in connection with the Royal Horticultural Society under the presidency of some one capable of discriminating between different forms, and Mr. Barron, and Mr. Wright, superintendent of the garden; and if anyone is more prepared to show his knowledge of the growth and culture and comparative merits than the late and present curators of Chiswick, he is now to declare his willingness to serve. For purposes of comparison, it is of great importance that the magnificent old house of Vines at Chiswick should be preserved intact, and all the most promising new Vines budded on them, or planted in the same house, or in another as close as possible to the big vinery at Chiswick.

¶ There are or were many other Vines, American, French, Hungarian, &c., at Chiswick, and a small committee of experts to bar the door more securely against well-known varieties will prove one of the best protections for the old Vines in the great Chiswick vineries that have served us so well. This special committee could work in the awarding of the new Grape prizes in relation to the Royal Horticultural, Royal Caledonian, or other botanic or scientific society; and no new Grape should be certificated unless its origin was satisfactorily given.

I make no charge of unfairness against the character and ability of the judges, with whom I have spent so many useful and happy hours; but it is hardly fair either to men or to the Grape-vines at a big show to have an unknown Vine without the fullest facts put before them, and require them an immediate stand and deliver verdict. No, it is a case for judges in chambers. The botanist, the student, the ablest practical man to be had, a silent, earnest, thoughtful juror; not a brilliant guess amid the flash and flare of a feast of *Chrysanthemums*, and the glitter and glare of one of our largest general shows. Were any further facts needed to prove the need of a special committee, and a book of pedigree of Grape-vines, they may be found in the fact that the many letters written on the parentage of a recent novelty with a striking resemblance to the Black Morocco and Black Morocco Prince, and differing only in quality from both its parents; the more prominent differences noted being that in the Black Morocco the leaves die off of a light yellow tint, whilst those of Black Morocco Prince die off of a purple tint. Hence, there are two Black Morocco Grapes, and there is little fear of one being taken for the other. *Caledonicus.*



FIG. 133.—*PLATYCERIUM WILLINCKII*. (SEE P. 433.)

Weinmannianum, though the flat bloom-trusses on the majority of bushes are covered with the down of seed-vessels. *Fatsia japonica* presents a decorative appearance, some large specimens 12 feet or more in diameter being loaded with Ivy-like inflorescence; while the *Habrothamnus* is still in bloom, and the Sea Buckthorn (*Hippophae rhamnoides*), with its grey-green foliage, lit up by innumerable orange berries, has a pleasing effect in the landscape. The clear yellow flowers of *Jasminum*

orange fruits, and *Plumbago capensis*, against a sheltered rock-face, held its pale blue blossoms until the month was well advanced; while the white flower-cascade of *Solanum jasminoides*, though visibly diminishing, was still an object of beauty. *Sparmannia africana*, in a nook protected from cold winds, is not yet altogether flowerless; *Tropaeolum Lobbianum* still drapes with scarlet a southern wall, and the long-stalked orange and vermillion blossoms of *T. tuberosum* spangle its

THE DISSOCIATION OF HYBRID CHARACTERS.*

(Continued from p. 392.)

THE next point is to test this theory by experiments, which M. de Vries has done, and they completely establish the above laws deduced theoretically.

Of eight monohybrids, the number of "potential" offspring (P) varied from 24 to 28 per cent.

Of di- to polyhybrids, of which one dominant character was selected, the "Potential unit" varied from 25 to 28 per cent.

Hence it was established as a general law, that the potential unit was always approximately 25 per cent. The next point was to unravel the 75 per cent., which appear to be all "dominant," (1), (2), and (3), being taken together; as of these, theoretically, there ought to be 50 per cent. of the true hybrid, i.e., numbers (2) and (3). These 75 per cent. were fertilised with their own pollen.

In the fourth year, the result proved that the theory was perfectly correct. It was verified in the case of crossing dark-red and light-red Poppies. These were crossed in 1893. In 1895 the result showed the usual 75 per cent. (D), and the 25 per cent. (P); and in 1896 the result was—dark-red, 24 per cent.; light-red, 25 per cent.; true crosses, 51 per cent. M. DE VRIES then represents the genealogy as follows:—

100 Seeds of the Cross, Dark Red × Light Red

75 Dark Red	25 Light Red
25 Dark Red	50 Dark Red
37 5 Dark Red	12 5 Light Red

This last proportion being again equivalent to 75 Dark Red, 25 Light Red.

The culture was continued for two more years: i.e., up to 1898, with precisely the same results.

The above can be very neatly represented by the following well known algebraical formula, where D represents either the pollen or ovules of the Dominant unit, and P, the Potential one. Assuming these to be five of each kind so as to make 100:—

$$(D + P) \times (D + P) = D^2 + 2 D.P + P^2.$$

i.e., when the cross is fertilised by itself—the result—is 5×5 (D), or 25 per cent. (D); $2 \times 5 \cdot 5 = 50$ (D P), or hybrids; and 5×5 (P) = 25 per cent. (P). Hence is proved the rule for the dissociation† of hybrids:—"The dissociation of antagonistic characters of equal part, deduced from the principle of elementary units of the specific characters, as the most simple case, receives a very perfect and general application. The dominant character may be in the foliage, as in crossing *Chelidonium majus* with *C. laciniatum*, or in the fruit, as in *Solanum nigrum*; and the author selected two varieties of Maize, characterised respectively by having a farinaceous and a saccharine endosperm.

It has already been shown by M. de Vries, that the endosperm can partake of hybridisation, as well as other and more conspicuous organs.‡ According to the theory, 75 per cent. of the endosperms ought to show the dominant character, in this case, starch; and 25 per cent.

* The title in full is *Sur les Unités des caractères et leur application à l'étude des hybrides*; but as this would not convey the main point, we have given a shorter one to this abstract.

† The author uses the word "disjunction;" but "dissociation" is the usual one with us.

‡ De Vries. *Sur la Fécondation Hybride de l'Endosperme chez Maïs* (*Revue Générale de Botanique*, t. ii., 1899).

the sugar, which had not been changed into starch, but remained potential.

He selected varieties having a white grain, abounding in sugar, and a yellow grain striped with red, having much starch. Such could be easily distinguished at sight. The result completely corroborated his previous experiments. The mean of twenty cases gave 25·6 per cent. of sugary endosperms.

M. de Vries concludes his interesting paper by observing that the law is not here first described by himself, for it was discovered more than thirty years ago by M. Gregor Mendel, and published by him in 1865.*

He not only deduced it for mono- but also for di- and polyhybrids, in the case of Peas. His memoirs, however, has remained unknown or forgotten.

M. DE VRIES has the merit, however, of having now generalised this law, so that it is presumably true for all kinds of hybrids in the vegetable kingdom.

SOIL CULTIVATION.

(Continued from p. 389.)

THE best method of disposing of manure enters to a great extent into the question of soil cultivation. Is it advisable to bury it deeply, or, on the other hand, to keep it mainly near the surface of the ground? That, to a large extent, depends on the nature of the crop, but under few circumstances is it necessary to bury manure in the bottom of trenches. I have long ago left off the practice entirely, as being at once wasteful, and as giving less good results than that of incorporating manures near the surface. To be quite explicit, manures buried from 18 inches to 30 inches below the surface can only be of value to the current crop in exceptional cases, as, for example, in the case of ground for the first time trenched, or for some deep-rooting plants. In most other cases heavy dressings of manures buried deeply would have been quite as well dispensed with till the soil was retrenched, and the manure applied fresh to the surface. What the old writers termed the "crust" is the section of soil that mainly requires enriching with manures, because it is the start in life that is at all times the most important. For this reason alone, the advantage of a soil so well cultivated with the spade that the young roots can freely ramify from the very beginning, and so judiciously enriched with manure that the plant can secure what it wants from the first day, cannot be over-estimated. Why, for instance, is it that so much Celery is lost? Certainly not for want of dung, for the necessity of a plentiful application of manure has become so thoroughly instilled into the gardening mind, that whatever crop has to go short, Celery is certain to be efficiently manured. Unfortunately, the manure is placed out of reach of the young plants, and the roots have a weary desert to pass before they can obtain benefit from it.

It is during this early period of starvation that the seeds of future loss are sown, while by the simple, and, as it appears to me, the sensible method of incorporating the dung with the soil from the very surface downwards, and thus providing the young plants with sufficient food from the time they are set out, losses might be averted, and an equally good, and perhaps a better crop result. This example is an extreme one, but the same thing may happen in a lesser degree to most other crops.

At this time of year there is yet another phase of soil cultivation that may well be accorded a passing notice, that of improving the soil for fruits and fruit-trees. The old practice of digging between the rows of Strawberries has been condemned as disastrous. But when one sees breaks of Strawberries continuing to yield annually large crops of fruits during a quarter of a century, and when we

know that as regularly as the plants crop, so equally regularly are they subjected to an annual spade cultivation, the practice appears to be not without some good reason to commend it. It is found, I think, in the production of an annual supply of young roots to occupy the place of those severed by the spade, and very largely through the ground being annually broken up by digging. The very considerable value of at once shortening roots and stirring the soil is seen in Potato cultivation in earthing up, and in digging between the rows. Cabbages, and other crops may be greatly benefited by the same practice, though it is perhaps not often pursued. Much of the benefit resulting from root-pruning fruit-trees at this season, may also be traced to cultivating the soil, which is a necessity in carrying out the work. To merely sever the roots by passing an instrument through the ground from the surface would no doubt cure over-vigorous growth, but it could have no effect in improving the quality of the fruit, as always follows root-pruning carefully carried out by opening a trench and returning either the soil intact, or adding fertilising material to it.

On glancing over what has already been written, it is apparent that it would be possible to find in some of the remarks a condemnation of trenching. This is not the writer's intention. By all means let those who can, trench as much, and as often as they please. At the same time I cannot disguise the fact that ground already deeply worked, can be efficiently cultivated by digging alone; though not by turning over the soil in huge spadefuls, followed by next to no other cultivation till the crop is sown or planted. We want, and want badly, an increase of shallow cultivation, trench or no trench, and if this cannot be had without leaving off trenching to a great extent, why, then leave it off. B.

NURSERY NOTES.

W. & J. BIRKENHEAD, SALE.

NOTWITHSTANDING the millions of Ferns that are raised annually in gardens from spores, and that appear, adventitiously as it were, in all sorts of unexpected positions in glasshouses, there is a sufficient demand for the rarer species and varieties of these interesting and beautiful plants to keep several nursery firms more or less employed in their collection and propagation. Of these nursery establishments none is better known, by repute at least, than that of Messrs. W. & J. Birkenhead at Sale, near Manchester; for few gardeners can be unaware that Messrs. Birkenhead have made "Ferns a specialty." They are Fern enthusiasts, and have means of acquiring rare species and new varieties that can only be obtained by a long experience of business dealings. Anyone who has admiration for these flowerless plants (and who has not?) may gain a very considerable amount of knowledge, and be delightfully interested by visiting the collection of more than 1,500 species and varieties in Messrs. Birkenhead's establishment. He may see the infinite variation in form and habit that exists not only between plants of generic distinctness, but also among varieties or "forms" of a single species; for the more representative, or we should say exhaustive, the collection, the greater facility does it offer for comparison. And if the visitor be not in too great a hurry to leave, a mass of information will be gained in conversation with the proprietors upon the characteristics of the more interesting plants in their charge, and the best manner in which cultivators may supply their needs under cultivation; for these are subjects they have studied carefully for many years.

Most gardeners have experienced at some time or other an interest in the singular plants belonging to the genus *Platyserium*, known as the Stag's Horn Ferns, and the interest aroused by acquaintance with one or several of the commoner species is sure to grow if it be stimulated by obtaining a

* *Versuche über Pflanzen-Hybriden* (Verhandlungen d. Naturvereins in Bracon, t. ix., p. 1).

familiarity with others, including those that are very seldom seen in private gardens. Some of them are not particularly easy of cultivation, it is admitted, but perseverance with them will usually be rewarded by success, and by including them in one's fernery the single species that probably alone represents the genus at present would have vastly more interest for us. The commonest species in gardens is *P. alcinorne*, which succeeds well enough in the temperature of an ordinary greenhouse; but another very handsome species, known as *P. Willinkii* (see fig. 133, p. 431, with drooping fronds

late years, there have been introduced to commerce many garden-raised varieties that continue to increase their diversity. In passing through the houses the attention was attracted by excellent specimens of some varieties, and by forms that are rare to a lesser or greater extent. *A. Birkenheadii*, which makes fronds 2 feet long, and has rather small pinnæ, raised in these nurseries, and distributed in the Queen's Jubilee year: *A. Hodgkinsonii*, resembling *A. gracillimum*, being almost as elegant, but possessing a stronger habit and constitution; *A. rubellum*, which presents a lovely

A. pruinata; its fronds are glaucous on the under surface, like those of *Cyathea dealbata*; it has not yet shown a disposition to make a stem, but as a dwarf plant is very pretty. *A. Rebecca* is also very effective as a dwarf plant, but makes a good stem, and has a strong habit of growth; its foliage is dark glossy green. *Brainea insignis*, an old tree fern of rather small growth, is not common, but it is a very pretty plant, with pale green foliage.

Among a very large collection of *Davallias* and *Gymnogrammas* were noticed *D. Fijiensis gracillima*, a very beautiful variety; *D. pedata*, a very

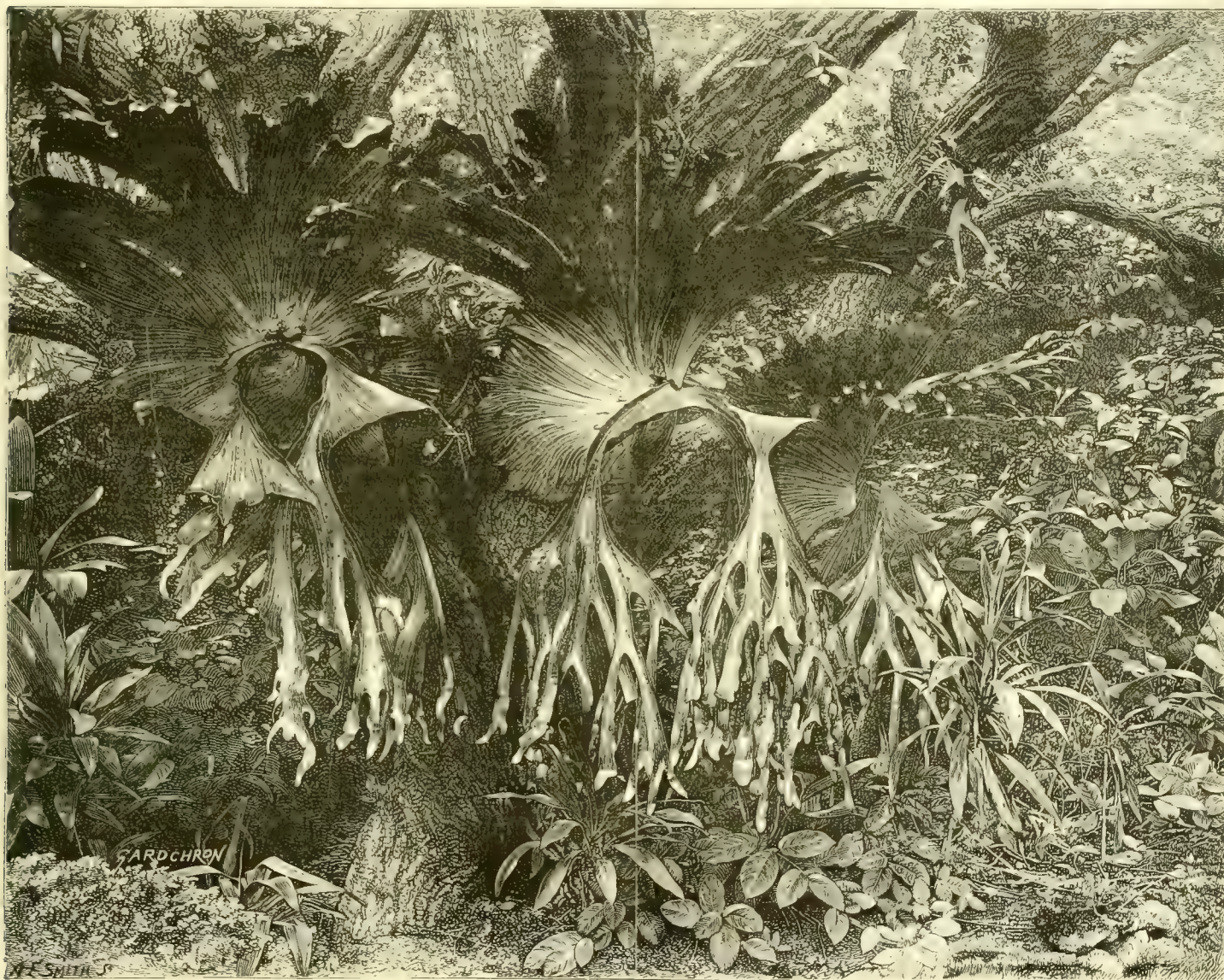


FIG. 134. — *PLATYCERIUM GRANDE*.

very dissimilar to *P. alcinorne*, may also be cultivated under the same conditions, or in the hot fernery. More heat is required by all the other species, which include *P. stemmaria*, or *æthiopicum*, from West Africa, which has broad, leathery fronds; *P. Hillii* (Australia); *P. grande* (see fig. 134), generally acknowledged the finest representative of the genus; *P. angolense* (see figure on p. 444 of a plant in the collection at Kew); and *P. Wallichii* (see fig. 135, p. 435), the rarest of them all, a species with more than usually foliaceous fronds. The specimen of the last-named species at Sale is probably the finest in this country.

The great genus *Adiantum* is thoroughly well represented, and if new species have been few of

colour in spring; *A. æthiopicum aureum*, the best golden Maidenhair, which was found near to Harrismith in the Orange River Colony; *A. neocaledonicum*, the elegant *A. dolabriforme*, so pretty when cultivated in a basket, and others. The British Maidenhair Fern, *A. capillus-veneris* and its varieties, are also cultivated in greenhouses or frames, for though hardy, they succeed much more perfectly when thus protected. The variety known as *imbricatum* (see fig. 141, p. 445), is the most handsome, and has large overlapping pinnæ; its barren fronds are almost as handsome as the fronds of *A. tenerum* Farleyense. *A. c. v. gracile*, of a very opposite character, is elegant.

Among the *Alsophilas* and other tree Ferns was

dwarf-growing variety, with hard, leathery foliage (rare), and *Gymnogramma schizophylla superba*, a stronger-growing variety than *G. s. gloriosa*, and very fine. The lovely *Gleichenias*, including six or eight species, of which *G. dicarpa longipinnata* is one of the most elegant, very seldom grown with much success in gardens, were represented; and a fine plant of the beautiful specimen Fern *Thyrsopteris elegans*. *Asplenium*, *Polypodium*, *Lomarias*, *Nephrolepis*, *Acrostichum*, *Nephrodium*, and other genera are represented in Messrs. Birkenhead's collection in as complete a manner as we have described those already mentioned.

Of late years the filmy Ferns have been culti-

vated in greater quantity, for it is now recognised that these peculiarly fascinating members of Filices may be grown with less trouble and expense than was at one time thought. Very few of them, indeed, need to be cultivated in specially constructed cases, providing that a division of the fernery can be devoted to their culture, and the atmosphere in same be maintained in a state of moisture approaching saturation point.

The Lygodiums were noticed, including *L. japonicum*, which Mr. Birkenhead said is often wrongly named *L. scandens*, but though a pretty and rather hardy variety, it is more pointed than *L. scandens*, and is deciduous, whereas *L. scandens* is evergreen. *L. microphyllum*, with its minute foliage, is interesting. Selaginellas, that are always more or less associated with Ferns, may be seen in 100 different varieties in Messrs. Birkenhead's collection.

THE HARDY FERNS.

There is an important department in the Sale Nurseries, of which very much could be written without exhausting the subject, but which on the present occasion must be remarked upon in general terms. The allusion is to the stock of hardy Ferns, including those from North America, and the species indigenous to Britain. Readers of the *Gardeners' Chronicle* who may not have had much experience with hardy Ferns themselves, have nevertheless some knowledge respecting the infinite variety they afford. Our friend, Mr. C. T. Druery, and other correspondents, have frequently referred to them in these columns; and beyond the question of mere variation, some very important facts concerning such subjects as "Multiple Parentage," "Alternation of Generation," "Fixity of Varietal Characters," &c., have been recorded by some who have studied their life history. It would be impossible here to convey a sufficient idea of the beauty and diversity of forms of the Lady Fern, to those who may not have studied them.

The hardy Fern enthusiasts may be said to have all the zeal of the old florists, but they do not pursue quite the same ideals. Instead of setting up a standard of excellence for this or that plant, they seek with the greatest interest, every deviation from the normal type, and amongst their endless varieties the ordinary types have a poor place. These "gems" (varieties), many of which have proved to possess a remarkable fixity of character, are sometimes looked upon by the botanist as mere monstrosities—cases of modifications from the natural types, due to changes in environment, and preserved by selection. Mr. Birkenhead, however, would probably maintain that these varieties with tassels, crests, and other curiously-modified fronds, are as natural as any, since most of them have been found in a state of Nature, and some would claim for the varieties a place in botany. But though there are districts where crested Ferns are commoner than elsewhere, they are exceptions, and not the rule, under conditions where the "fittest" only survive. Apart, however, from the scientific question of these varieties, many of them are so beautiful, others so wonderful, that they are extraordinarily interesting.

Some varieties of *Athyrium* have narrow fronds, with "crests" all along them; others develop very little foliage except at the point of the frond, and there a very heavy crest. But in *A. filix-femina* Victoriae, in addition to having a crest, the leaflets cross each other like so much lattice-work. The names some of them have been given are rather alarming. Take, for instance, the following—*Athyrium filix-femina plumosum superbum grandiceps*!

The *Lastreæ* also furnish much variety, but their registered number is probably less than of the *Athyriums*. Some of these have a little perfume, especially *L. fragrans*, a rare greenhouse species, that gives a scent almost like that of Violets.

Polystichums and *Scolopendriums* have furnished varieties quite as remarkable as any, some of the crested *Scolopendriums* especially. A *Polystichum* that appeared more elegant even than varieties

by which it was surrounded, was named *P. angulare divisibulum elegans*. The *Woodsias* were growing with uncommon vigour. *Adiantum pedatum*, a perfectly hardy species from North America, is cultivated under glass because its long and elegant fronds are liable to be injured by late frosts. *Aspleniums*, *Blechnums*, *Osmundas*, and the other genera are all well represented by good plants.

Another word about the hardy Ferns, and this note must be given finality. It is a somewhat unusual sight to see them planted out in rows in an ordinary garden, like so many Cabbages or Potatoes. They seem a strange kitchen-garden crop! Remarking to Mr. Birkenhead, "You do not probably require much manure for a crop of this sort?" he replied, "No; the plants don't require it for food, but we use a little, because farmyard-manure is so good a corrective to drought." Many Ferns are purchased for covert planting, and such as these, that are grown out in the open in full sun, are about as hard and as suitable for the purpose as possible. The *Athyriums* and other genera are propagated by spores, grown on, sorted, and in a few years named; in fact, just as the *Chrysanthemum* specialist procures his novelties, excepting the intentional crossing of selected varieties.

If the above notes should induce some readers to visit Sale at the end of next spring, they will be welcomed by the courteous and skilful proprietors, and the Ferns will then look their prettiest. R. H. P.

BLETCHLEY PARK, BLETCHLEY.

HERBERT S. LEON, Esq., the owner of this estate of about 300 acres, possesses a modern mansion, and pleasant gardens and pleasure-grounds, which are planted with taste and skill, so as to be almost as bright and interesting in the winter as in the summer season. The more modern part, that adjacent to the mansion, merges in easy stages into the park-like land, studded with Elms and other trees of considerable age, the survivors of those days when the residence was an old country house, and farming rather than gardening occupied the attention of the owner. In those days the residents were doubtless put to many shifts for lighting, heating, and water; but at present, after the expenditure of a large amount of money, the estate is self-contained. The best appliances for raising, filtering, and purifying of water from a well on the place; providing electric light, warming the glasshouses and mansion, render the estate independent as possible of the outside world. The heating and motive power are effected from one centre by the use of a duplex arrangement of Badcock & Wilcox's Scotch furnace, of which Mr. A. Hislop, the gardener at Blechley Park, speaks in the highest terms, some 4,000 feet of 4-inch piping being heated by it, besides the other work which it has to do, in a satisfactory manner.

At the entrance to the grounds a grand avenue of Elms, two rows on each side, gives importance; and a broad, smooth, gravel track about a mile and a half in length runs around the estate. The land on each side is planted with Conifers, flowering shrubs with variegated foliage, and perennial herbaceous plants. At various points the rockeries, constructed of tufa, are arranged, and planted with *Retinosporas* and other shrubs of moderate growth, and with flowering plants; the one placed to face the entrance to the cricket pavilion being very attractive. In a hollow on one side of the mansion, a geometrical garden has been formed, and beyond it is a piece of ornamental water in which Canadian trout are said to thrive. Branching off here and there, walks bordered by banks of shrubs, each of them having some distinguishing feature as a background, meander about, and afford variety as well as shelter. Thus some of the walks have the backs of the shrubberies of Pines, one of the Lombardy Poplar, another of the Abele Poplar, and so on, each of the walks having some salient feature.

At the edges of the shrubberies the brightest and most effective objects are golden-leaved Privets, Yews, Hollies, and other plants, which have the look of flowers when seen at some distance off. *Prunus Pissardi* is still effective. By pruning this tree in the summer, Mr. Hislop, the gardener, compels its leaves to remain till the winter sets in. The blue tints of fine specimens of *Picea pungens*, and *Picea Parryana glauca*, and the varied hues of green on the bank of varieties of *Cupressus*, *Thuia*, and *Cryptomeria elegans*, standing adjacent to the mansion, afford a feature of much brightness at all seasons.

In parts near to the lake, and elsewhere, pretty effects have been obtained by covering a number of tree-stumps with Ivy in variety. The entire planting and laying out of the garden is such, that there is a total absence of artificiality.

THE GLASSHOUSES

are numerous, and include vineries, Peach, and other forcing-houses, and ornamental plant-houses. "Decorative plants" are largely grown. The conservatory, which is attached to the mansion, contains a rockery that is planted with Ferns, &c. Plants of Palms, coloured *Dracenas*, *Codiaeums*, *Anthuriums*, Ferns, &c., fill a number of the glass-houses; one is filled with *Poinsettia pulcherrima*; one with *Primulas*, now coming into flower. Another has rows of *Nepenthes* in baskets hung up to the roof; and here *Adiantum Farleyense* was noted in splendid condition; also large specimens of *Pritchardia grandis*, *Verschaffeltia splendida*, and other rare Palms were to be seen in fine condition. *Chrysanthemums* are grown in quantity.

THE ORCHIDS.

As is usually the case in gardens where the cultivation of Orchids is encouraged, they have increased in numbers until at the present day they occupy an entire block of houses, the ends of which are combined by a rockery-house, in which the tufa is clad with *Ficus repens* and Ferns. Some years ago Mr. Hislop took a keen interest in crossing Orchids, especially *Cattleyas* and *Laelias*, and so good a grasp had he of the subject, that he has been rewarded with much success, raising and flowering some of the showiest and most distinct crosses, notably *Cattleya* × *Maggie Raphael* (*aurea* × *Trianae*), a very pretty and distinct flower; the handsome *C.* × *Herbert S. Leon* (*Schrodæra eximia* × *Warszewiczii Sanderiana*), for both of which First-class Certificates were obtained; *Cattleya* × *Fanny Leon* (*L. - C.* × *Exoniensis* × *C. labiata*), a pretty flower; and *Cattleya* × *Hislopii* (*Lawrenceana* × *Luddemannia Ernestii*), distinct, and different from the variety *C.* × *Preciosa*, said to have similar parentage. Like most experts, Mr. Hislop has special methods of raising the plants. He prepares small Orchid-baskets, partly fills them with peat and closely-growing sphagnum, and across each, just above the surface of the compost, on the upper side of the basket he fastens a roughened bar of Teak similar to those used in making the baskets. The prepared baskets are kept on hand, hanging up in the warm corner of the Orchid-house where the seedlings are to be raised, until they are wanted for use. Before the seeds are sown, the baskets are thoroughly wetted, and then the moisture is allowed to drain off. This being done, the seeds are sown on the Teak cross-bar, and water is applied when it is required by immersion, which falls short of reaching the surface where the seeds lie. When the seedlings have grown to a size at which they can be pricked off, this matter is attended to in the usual manner. Mr. Hislop has a considerable number of hybrids in prospect—*Lælia Digbyana* crossed with nearly all the showy *Cattleyas*; *Cattleya aurea* and other showy things crossed with fine forms of a good species, for it is considered a waste of time to use poor or ordinary forms. In one of the houses is a plant of *Staurosis (Vanda) gigantea*, crossed with *Vanda suavis* and *V. tricolor*, the capsules approaching maturity; and many other interesting crosses are in progress. In one of the houses a batch of *Zygopetalum*

Mackayi was noted in flower. These plants represent one of Mr. Hislop's few failures. The plants come from *Z. Mackayi* crossed with *Odontoglossum crispum*, but, although the seedlings differ slightly from the parent, they can be called nothing but *Z. Mackayi*. The same result has been recorded in other places. Among the seedlings in flower is a pretty hybrid of *Cattleya Bowringiana*, *C. × Arthuriana* (*luteola × Dormaniana*), *C. × Hislopi*, and a few others.

The *Odontoglossum*-houses contain plants in grand condition, their entrances having good displays of flowers, made up of *Odontoglossum crispum*, *O. Pescatorei*, *Oncidium Forbesii*, *O. ornithorhynchum*, *Mesospinidium vulcanicum*, and a large number of fine *Sophranitis grandiflora*, together with many plants of other species. In the *Cattleya* and *Lælia*-houses the forms of *Cattleya*

in baskets very luxuriantly; a fine collection of *Dendrobium*s, and a number of *Cattleya Trianaei* and *Lælia purpurata*, well furnished with flower-sheaths, together with a vigorous batch of *Coelogyne cristata*.

THE KITCHEN GARDENS

are extensive and well cropped, and one of the finest vegetables noted was Sutton's Arctic Kale, one of the best of vegetables. It is a great favourite here. The out-door fruit crop is reported to have been good.

FENCES AND FOOTPATHS.

I SUPPOSE the land in Great Britain is the most extensively fenced-in of any country in the world. From my room-window, on the slope beyond, I can see about 150 miles of fences, if not more, and it is

were 70 miles in extent or thereabout. All these the forester had to keep in order, but the order was not of the highest; it could not be afforded, and the fencing work consisted chiefly in mending gaps, and very often these were only mended to keep cattle from straying. Barbed-wire came as a boon and blessing to foresters.

TRE-PASSERS BEWARE!

I suppose our system of agriculture necessitates fences, but in Germany and France, the Rye, corn, and other crops of one farmer meets those of his neighbour, and sometimes the division is marked by a narrow public foot-path along which the children walk to school in single file. Contemptuous comparisons are sometimes made between British and German customs, to the disadvantage of the latter; but in rural districts in Germany, among the common people, there is a respect for private property, and much less wilful trespassing in fields and forests than there is in this country. In the mining districts in Yorkshire and elsewhere, wherever there are factories, the foot-path nuisance will have to be dealt with sooner or later. Farmers complain as much as anybody, for their fields are crossed in all directions, and once a path becomes established it is very difficult to stop it. A narrow path would not matter so much, but whole head-rigs of fields are trodden down by pedestrians who go on to the grass to avoid the beaten path in wet weather. On not a few well-known estates to which the public are admitted, privileges have been curtailed because of the wanton trespass by visitors in woods and game preserves, and the danger from fires caused by careless smokers. It is here where the barbed-wire comes in useful.

Notice-boards indicating that "trespassers will be prosecuted" (persecuted an estate painter once put it) are usually melancholy spectacles as targets for stones, but the wire is effectual. A young plantation that I know of would have long since been ruined but for that. Whenever the hounds or the harriers were out, the loafers on foot went anywhere for a short cut; and as this plantation lay across their path, it was crossed in all directions. Two stiff, thick-set barbed-wires were put round the wood in the hedge, and it was effectual. The rush was made as usual, and there was much profanity, but not one got over.

Estate-owners in England are far less strict in the matter of foot-paths than is the same class in Scotland. There are fewer lanes and stiles in Scotland than in England, and trespassers are more looked after. The fences in Scotland are also better kept, especially hedges, because round both woods and fields they are, as a rule, kept by the landlord, and the cost of keeping is divided between the landlord and tenant. On some of the larger Scotch estates, especially in the lowlands, the hedges extend, I believe, to several hundreds of miles, and permanent squads of hedgers are employed, who do little else the year round than attend to the fences. Some Scotch hedgers are expert hands with the hedge-bill or "switch," and will trim a Quick Thorn-hedge as smoothly as it could be done by the hedging-shears.

The cost of keeping up live fences on estates has now, however, become such a burden that they are being in many places dispensed with, and cheap wire or iron fences substituted. There is a prejudice in favour of hedges; but where the estate expenditure has to correspond with the income, and that is generally the case, they are rarely well managed, and would be far better abolished. A case is not unlikely to come before the Court before long in which the charge for "dilapidations," in the shape of neglected hedges, is likely to be a staggerer. The tenant had the estate for many years at a nominal rent, on the condition that it was kept in good order; this was not done, and the charge for the renewal of the fences "as they were" will be a stiff one.

It is really time there was a reformation in the live fence business. Have them for or rent or



FIG. 135.—*PLATYCERIUM WALLICHI*. (SEE P. 433.)

labiate, and numerous specimens of *Lælia anceps* were making the chief display. In the *Cypripedium*-houses many hybrids in flower were remarked, some of them being home-raised; the better forms of *C. × Leeanaum* and the varieties of *C. insigne* predominating.

In a warm lean-to house there was noted a remarkable instance of the results of good cultivation in thirty-three plants of *Vanda × Miss Joaquim*, some of them 4 feet high, which had been propagated from one plant; and last year several of these plants flowered well, one having sixteen flowers on a spike, and this year still better results are expected. *Epidendrum bicornutum* is a species that is a success at this place, as are likewise some other species usually considered difficult to manage. Other plants in flower, or successfully treated, were *Cymbidium × Winnianum*, with three spikes; *Cattleya aurea* in some numbers, *C. Hardyana*, *C. Wagneriana superba*, *Vanda Kimballiana*, grown

almost the same all over the country where there is regular farming. Imagine the capital locked up in fences dead and alive. There are some rough live fences in Holland where cattle are pastured, but after you cross the frontier beyond, they practically disappear. The cattle are fed indoors, or in the forests, and the corn and cultivated lands need no fences. Nor are the forests fenced round. In tracts of forest thousands of acres in extent there are fewer fences than are found round the woods on a small estate in England or Scotland, where the live fences are simply an incumbrance, having all to be kept at the expense of the woods. In M. Boppe's report of the visit of the French forest officers to Scotch woods, he noted particularly that all the woods were fenced in, and that "the forester carried the key of the gates in his pocket." Round the numerous small plantations on an estate of less than 10,000 acres, I once measured the fences, which

shelter if you choose, but do not let anyone pretend that live fences are necessary as boundary lines in forestry or agriculture, for they are not, and are a dead loss. The time that the wooden palings, that would fence twice the length of the hedge for many years, are usually kept up on each side of a young quick hedge to protect it till it grows, is one of the absurd features of hedge management. The railways are great sinners in that respect. They have an officer called the Railway Estate Agent, whose duty it is to look after all matters connected with the company's land, including the fences, about which they know next to nothing, and the "permanent-way men" look after these and have their own way. Some of the railways have decent live fences in some places along their lines, but, as a rule, the hedges are of the fragmentary stamp, and the inevitable wooden paling for the protection of the hedges. I know a home-timber merchant whose saw-mill is practically kept going in providing wooden fencing materials for a section of one railway to guard the hedges, always being renewed.

Railway shareholders must be blind to many things. I am familiar with one well known railway that has been growing live fences, hundreds of miles, for about fifty years, and have not got them yet, while the double paling, or one strong paling at least on the outer side, is still required. The way that railway hedges are mauled at the top by ignorant workmen, and mutilated at the root, is pitiable.

KINDS OF LIVE FENCES.

Although the Quickthorn hedge has always been the most popular, it is not the best. The tree that forms a stout fence soonest, wants the least cutting, and does not get thin at the bottom, makes the best hedge, and the common thorn does not excel in these qualities. It grows fast, but to have it dense it has to be cut in severely towards the top, otherwise it becomes naked at the bottom, and it is the hedges that cattle can see through that they attempt to get through. I believe the prickly nature of the Thorn originally suggested its use for hedges, but prickles do not deter horned or indeed any kind of stock from squeezing through a hedge. Cattle, unless they are forced, rarely or never attempt to break through a live fence of sufficient height, however weak it may be, if it looks dense. The Privet-hedge has been condemned because it is supposed to make a weak fence, whereas it makes just as good a fence as any other plant, especially the broad-leaved variety. But I have often seen high hedges of the common Privet that could not have been forced by a bull if it had tried. At Quarter Bridge, near the ancient Kirk Braddon in the Isle of Man, there used to be a common Privet-hedge so high and dense that it would have stopped any horse or bullock however driven; and one often sees such examples, but forgets where they are.

In my opinion, the common Beech makes a real good hedge sooner than any other plant, whether as a barrier against cattle, or for shelter. I have seen a Beech-hedge one could not see through, summer or winter, 10 feet high, formed round a garden in a surprisingly short time. The Beech-hedges in some nurseries are a feature. One good point about the Beech is, that it furnishes well at the bottom, and keeps dense, no matter if the top is never cut back. No other plant equals it in that respect.

The grand Beech-hedge at Meiklour, on Lord Lansdowne's estate, in Perthshire, is a fine example. Herewith I send you a photo of it. This hedge (fig. 138, p. 442) has a history, which has been handed down from sire to son on the spot. It forms the boundary between the grounds and the highway, and as it is planted close to the roadside, it has to be cut in periodically, particularly on the side next the road. The trees stand about 18 inches apart, as they were planted in 1746, just before the battle of Culloden Moor. The story runs, that the men who were planting the hedge left their work shortly before the battle to fight "for Prince

Charlie," hiding their tools beside the hedge, and never returned to claim them, as they died at Culloden. The hedge is said to be from 70 feet to 90 feet high, is about a quarter of a mile long, and dense throughout down to the ground. A kind of fire-escape ladder is employed when the men cut it. Each plant in the hedge is now a straight clean pole, and the trunks are so near to each other at the ground that they meet in some places. The story is told that once when a foreign gentleman was boasting to the noble proprietor of Meiklour, about his hedges, the latter capped him by retorting that he had a hedge on his estate in Scotland that the partridges could not fly over—quite a probability, as partridges always fly low. What I would draw attention to here is, the density of the Beech at the bottom, and at such an age, considering that the trees have never been topped, as the shape of their stems testify. A thick, dense Beech hedge can be grown by simply trimming in the sides and letting the tops alone.

Beech hedges are much in favour in Perthshire, and they are models from an agriculturist's point of view—not too high, stout, dense, and well kept. Another good quality of the Beech is, that it bears shade well, and does not leave gaps under hedge-row trees, as most other hedge plants do, as not being shade bearers they gradually dwindle and die. *J. Simpson.*

CULTURAL MEMORANDA.

IPOMÆA HORSFALLIÆ.

THIS evergreen stove-twiner makes a gorgeous display during the winter. The finest specimen that I have observed was growing in a stove in a brick-work enclosure 2 feet square. The bottom-most layer consisted of drainage materials, then above this some large pieces of charcoal covered with sods, the grassy side of which was put downwards, and at last the compost which consisted of equal proportions of loam, cow-dung, leaf-mould, and mortar-rubble. The plant had to ascend a pillar 6 feet high in order to reach the tie-rods of the roof, where it was allowed to ramble at will, with attention as to tying out the leading shoots as they grew. *H. T. M.*

TREES AND SHRUBS.

PYRUS VESTITA.

THIS very handsome species is not so much planted as its merits would justify. One peculiarity that we have not noticed till this season is the length of time the leaves remain on the trees before they fall. In a mixed plantation in which all the trees have been bare for some weeks, this *Pyrus* is only now shedding its leaves.

THE WEEK'S WORK.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of ILCHESTER, Abbotsbury Castle, Dorsetshire.

Bedding Plants.—The weather has been favourable for these plants, and even those of which the cuttings were struck late are looking as well as those struck early in the autumn. In fine weather afford water to all plants if found dry on examination, filling the pot up to the rim, but do not apply water to any plant not really in need of water. *Pelargoniums*, *Coleus*, and *Fuchsias*, will always obtain enough moisture from the air to carry them through a few days. If artificial heat can be applied, let the floors and walls be damped in the early morning and at midday, and syringe plants of *Lobelia*, &c., with rain-water in the early morning. Remove the decayed foliage of small-leaved plants, and lightly prick over the pans with a pointed bit

of stick. If mildew is seen, apply flowers-of-sulphur, and let no cold draughts reach the plants. *Verbenas* are especially prone to mildew if exposed to cold air. For damping-off, use charcoal-powder, and keep the plants nearer the glass and the light. For killing green-fly, fumigate the houses on a calm moist day, and if the smoke escapes through the laps, syringe the outside of the roof with water.

The Hardy Fernery.—At this season many Ferns will have lost their fronds; and in the case of the hardier species, these may be cut off, but those of the rather tender species, a few may be tied over the crowns as protection against frost. The soil may be raked over, and a coating of fresh sandy leaf-mould spread on it. Ferns do best in half shade where evaporation is slow, and in making a new fernery this is a matter of importance, as a fernery should be in shadow for at the least some part of the day. Running water conducted through it affords humidity, and conduces to coolness. Stone, especially sand and freestone, are better materials than tree-stumps in constructing a fernery, as the latter soon decay. For filling-in on a fernery, loam or peat with much sand makes a good compost; and good drainage must be secured.

Pruning Deciduous Shrubs.—The weather being generally favourable for out-of-door work, pruning may be pushed on with. Overgrown shrubs, or those which are encroaching on neighbouring shrubs of rarer species, may at this season be reduced in size, and in some instances cut down to within 3 feet of the ground; care being taken in the case of worked plants not to cut below the graft. Lilacs in variety, *Cornus* of species, *Symphoricarpos*, purple-leaved *Hazel*, *Elder*, and *Crataegus*, often require this sort of treatment. If plants of *Weigela*, *Ribes*, *Deutzia*, shrubby *Honeysuckle*, *Philadelphus*, *Berberis*, *Colutea*, purple *Corylus*, *Althæa frutex*, *Viburnum*, *Crataegus*, *Spiræas*, and *Rubus*, were planted this autumn, make the soil or the roots firm by trampling it when dry on the surface.

PLANTS UNDER GLASS.

By T. EDWARDS, Plant Foreman, Royal Gardens, Frogmore.

Zonal Pelargoniums.—These brilliant plants will now be generally getting past their best, though when grown in a cool, dry, light house, flowers will be produced more or less during the entire winter. In order to economise space, the stock may at this season be considerably reduced in numbers by throwing away the least distinct and free-flowering varieties, additions of improved varieties being made in the spring. It often happens when flowering is over that the plants do not receive the required amount of water, and are enfeebled by being crowded together. The soil in the pots should be kept rather dry, and ample ventilation, with a minimum temperature of 45°, afforded the plants, keeping them near the glass, with a view to obtaining well-ripened shoots as cuttings towards the end of the month of February. This is a point on which success principally depends, it being useless to commence with soft cuttings. Plants not required for propagating-purposes will, after a period of rest, and with the assistance of manures when growth recommences, flower again profusely during the spring months.

Hardy Forcing Plants.—The potting-up of these plants should now be finished; and while mild weather continues, the plants will be better if placed outside. The first potted Lilacs should now be started, an early vinery or a Peach-house being a suitable place before removing them to the forcing-house. Afford but little water till the roots become active, but syringe the tops frequently. The earliest batch of *Polyanthus Narcissus*, single *Hyacinths*, and *Van Thol Tulips* will now be ready for moving into heat, making up potsful of the latter as the bulbs come into flower, always removing them to cooler quarters before the flowers become fully developed. Border *Narcissus* should be brought on in a cool house, as much of their beauty for conservatory decoration depends on their being well furnished with foliage.

Miscellaneous.—*Campanula pyramidalis* in pots may be placed under glass, for the plants, although quite hardy, are injured by heavy rains and cold winds. *Montbretias* in pots also place inside, where severe frost cannot reach them. *Francoa* seedlings may be removed to 5-inch pots, using a light, sandy soil for them. They do not require large pots nor rich soil, the flower-stems often grow

fasciated in such. Divide old plants, and pot-off rooted offsets.

The Store.—The night temperature may now for the space of five or six weeks be reduced to a minimum of 65°, for an ordinary mixed collection of plants. Lower the blinds on frosty nights, or when cold winds blow; and in very severe weather a temperature 2° or 3° lower than that indicated is better for the plants than much heat in the pipes. See that the evaporating-pans are filled with water, and paths are damped down the last thing at night.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLYFORD, Westonbirt, Tetbury, Gloucestershire.

Herbs.—Spear Mint may now be lifted from established beds and placed in boxes or pots, and stood in cold pits till wanted for forcing. Where much Mint is forced, it is prudent to plant a piece of land annually for this special purpose. Young Mint makes by far the quicker and finer growth, and is therefore to be preferred for forcing. Some of the potted or boxed roots should be put into the forcing-house forthwith. Whether forced or not, afford the roots enough moisture as will preserve them in a healthy state. If some of the roots are covered with bracken or short litter, the herb will be obtainable early in the spring.

Chervil.—Sowings may be made in boxes now, and early in the new year. Should the stock of dried Tarragon be insufficient to last throughout the winter, a few roots may be lifted and treated like Spear Mint.

Basil may be raised from sowings made at this date and subsequently, sowing not on rich soil, but on sandy loam, and thinly, as the plant is very liable to damp off.

Salads under Glass.—This is no small item when, besides Lettuce and Endive, Mustard, Cress, &c., are needed. The later sowings of Radishes have done well this year out-of-doors, owing to the absence of frost, and with mats supported by hoops the supply should last till the new year. Preparations for frequent small sowings indoor should be made, and while mild weather lasts a temperature of 50° will be easily maintained in which to start the seeds. After December, 60° will be necessary. The Radish runs to leaves if kept in temperatures higher than 50° to 60°. A rich soil should be used, in order to induce quick growth. Apply water daily till the bulbs are large enough for consumption. Although in warm districts sowings in the open may still be made, it is not a method which pays for the trouble. If the beds are covered in frosty weather, early crops may be obtained, but the birds usually devour much of the seed, and slugs do great damage unless wood-ashes or soot are constantly and freely used.

Chicory and Dandelion.—A few roots of each may be placed in the Mushroom-house.

Lettuce and Endive.—Lift all plants still in the open quarters, and place them in frames or boxes, and store the latter till wanted in a Peach-house. To blanch them, place flower-pots over them. Those in frames should receive water occasionally, pouring it on the soil and not on the plants. In mild weather tilt the lights the whole day. If slugs are troublesome in the frames, sprinkle the soil with soot, keeping it off the plants.

Onions.—When the gardeners cannot work out-of-doors, let them sort the Onions in store, removing decaying and unsound bulbs, and spreading the stock out thinly, if there is space to do so. An Onion-store should be cool and dry.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Oncidium aggregatum.—This plant seldom retains its vigour for any length of time under cultivation, owing probably to deficient sunlight and sunheat, fluctuating temperatures, and its excessively floriferous nature. The plants should at this season be placed where the fullest amount of sunlight is obtainable and the warmth is considerable, water being applied at long intervals of time by dipping the pot or basket to half its depth in tepid rain-water, so that neither the pseudo-bulbs nor the whole of the rotting materials be wetted.

Oncidium cheiroporum having gone out of bloom should be suspended or placed on a shelf in the

warmer part of a cool Orchid-house, and no water should be applied to it so long as its tiny pseudo-bulbs keep plump.

Oncidium macranthum, O. lamelligerum, O. laxense, O. serratum, and others of the section.—The flower-scapes are now being formed, and to obviate any injury being done to them three or more stakes should be fixed in the pots, to which the spikes may be tied. The cool and moist conditions under which they are best grown do away with the need of much water, although when the materials appear dry water must be afforded. All cool *Oncidiums* suffer less at this season from a long period of drought than from too much water, the weather not favouring rapid evaporation of moisture.

Eulophiella Elisabethae.—To this species warmth and light are essential, but not in excess, or loss of flower-spikes may occur. The temperature should range at about 65°, and such conditions as suit *Phalenopsis* at this season are suitable for *Eulophiella*. The flower-spikes will soon appear at the base of the partially developed growths, and a piece of glass may be placed beneath each, in order to avert all risk of the spikes damping off. Keep the compost moderately moist.

Phalenopsis.—The species which flower in the winter, namely, *Aphrodite*, *amabilis*, *Stuartiana*, *Schilleriana*, and the natural hybrids *Casta*, *leucorhoda*, and *intermedia*, do not succeed where smoky fogs prevail, though other conditions being favourable, the plants themselves do not greatly suffer. Good spikes should be removed from the plants when the flowers have opened, the plants being kept as dry as possible consistent with plumpness in every part. Humidity being abundant, it is surprising for how long a time these plants will remain in health without water being applied. On the contrary, a mass of soddened sphagnum-moss about the roots and much moisture in the air will be sure to work harm. All rank-growing moss should be taken off the pots before the winter begins. *P. Emeraldal*, *antennifera*, *Buyssoniana*, and *Lowii*, being semi-deciduous, should be kept dry for some time before any water is afforded. The species, *P. violacea*, *Luddemanniana*, *speciosa*, *Mannii*, *Marie*, *Boxalli*, and others of this section, suffer but little from a restricted quantity of water, and they should be placed in the warmer parts of the house, excepting *Mannii* and *Boxalli*, which require less warmth than any others. Green-leaved *Phalenopsis* may be more densely shaded than those with mottled leaves, but at this season this is an item of little importance.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Apples and Pears.—In many private gardens the forms of trees preferred are the bush, pyramid, espalier, and cordon. The bush is a favourite with gardeners, as, besides cropping well under proper cultivation, the bushes take up less space and throw less shade than standards; moreover, the fruit is gathered easily. The espalier is favoured by many as useful for making dividing lines and screens in the kitchen garden. Cordons, either upright or obliquely trained to wire trellises answer well, and this is an excellent system. Ribston and Cox's Orange Pippins yield fruits of extra fine quality when grown thus. The pruning of the foregoing may be performed at a convenient time, the earlier the better, and then so soon as the trees are cleansed the borders may be manured and lightly dug over. Whether little or much pruning has to be done depends upon the amount of attention the trees have received during the summer, for if the stopping of young shoots was carried out, the pruning resolves itself into the shortening of any spurs of undue length, the thinning of spurs where crowded, and the tipping or shortening of the leading shoot, as the case may demand. The shortening of spurs should not be carried out on varieties which naturally form their fruit-buds at the ends of the shoots, of which Potts' seedling, and Gascoigne's Seedling Apples, and Marie Louise and Alexandre Lambre Pears are examples. These should be allowed to bear fruit and then be shortened or removed.

Bushes.—If summer pruning was neglected, all spurs should be shortened to three or four buds, and if the spurs are very numerous, remove many of them entirely, and deal with the leading shoot

as already directed. Where the branches are crowded together remove a few of them, so as to let in sun and air. It is on this account that I prefer bushes to pyramids. In a well-trained bush the centre should be open, and the branches stand at a good distance apart; and as a consequence each branch becomes clothed with fruit-spurs. In the case of a pyramid, the needful amount of training and the necessity of preserving a stem, prevents the branches being disposed in open order as in a bush.

Espaliers and Cordons.—Established trees should be pruned in so far as the spurs and leaders go, dealing with them according as circumstances may dictate. Young trees which have not covered the trellis should be pruned so that extension may be accomplished within as few years as possible. Let particular attention be paid to the pruning of young bushes and pyramids of Apples and Pears, and when thinning and regulating the shoots, no more than are necessary should be left to form the ground-work of the tree. The central shoot of pyramids should be left for vertical extension, topping it somewhat. No central stem is needed by a bush. Cut back superfluous shoots to four buds to form spurs, but defer shortening the others for the present, as these shoots will eventually become the main branches, and the shortening of them is best done when they have been trained into their proper positions.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of PORTLAND, Welbeck Abbey, Workson.

Early Figs.—With permanently planted out Figs in succession-houses at command, the earliest one may now be started. With favourable weather, and the command of plenty of heat, fruits will be ripe in the month of May, succeeding the pot-trees. It is of importance to afford warmth to the border, in order to quicken the action of the roots, and this is usually effected with fermenting material, about 1½ ft. in depth, put on the top of the border, care being taken not to let violently-heated materials touch the main stem. This bed should be made up of equal parts of stable-litter and tree-leaves. The materials should be turned twice a week, in order to prevent excessive heating occurring. The warmth from the bed, and the ammonia given off, will be beneficial to the fruit and trees in the earlier stages. Syringe the trees early in the morning and in the afternoon about 2.30, and always allow the trees to get dry for a hour or two in the middle of the day. In the first fortnight a temperature of 50° at night and 55° by day will suffice. In mild and sunny weather let air be afforded, as nothing tends more to cause fruit-dropping than an ill-ventilated house. In such a place leaf-growth is developed too rapidly, and the fruit is deprived thereby of the proper amount of nutriment. When the fruits are of the size of full-grown Walnuts, it is time to begin to remove the fermenting materials, enough being allowed to remain to form a mulch, and afford protection to the roots just under the surface.

Late Fig-houses.—Let all pruning and training be finished forthwith, and root-prune any over-grown trees, exercising much care in doing so, and bearing in mind the size and age of the trees. The operation should be begun at the least 6 feet distant from the stem, the old soil being removed, all small roots preserved uninjured, and the stronger roots followed up to within about 1½ foot of the stem, at which point they should be severed with a knife. Use good loam, of middling adhesiveness, mortar rubble, and crushed bones; lay out the roots evenly, and at various levels, afford water, make firm, and finish with a mulch.

Cherries.—The slower the Cherry is forced at the first the more certainty there will be of a good crop of fruit being obtained. Where ripe fruits are wanted in the months of April and May, the Cherry-house may now be closed at night and on cold days, but no fire-heat applied unless frosts occur, a temperature of 40° to 45° being sufficient to keep the trees gently moving. Afford ventilation freely when the outside temperature is above 50°. Grossness in the Cherry is always a danger, and trees in this condition should be lifted with a ball of earth and replanted; and this may be done without risk to the ensuing crop of fruit. If annual or biennial lifting is practiced, the trees will have a mass of fibrous roots and wreaths of blossom-buds.

EDITORIAL NOTICES.

ADVERTISEMENT should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Dec. 18. { Royal Horticultural Society's Committees at the Drill Hall, Westminster.

SALES.

MONDAY, DEC. 17.—Border Plants, Roses, Lilies, and Dutch Bulbs, at Stevens' Rooms, 35, King Street, Covent Garden.

WEDNESDAY, DEC. 19.—Palms from Ghent, Araucarias, Roses, Liliums from Japan, Dutch Bulbs, &c., at Stevens' Rooms.

THURSDAY, DEC. 20.—Dutch Bulbs, Continental Plants, Roses, &c., at Protheroe & Morris' Rooms—Herbaceous and Border Plants, Carnations, Dutch Bulbs, &c., at Stevens' Rooms.

FRIDAY, DEC. 21.—Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—39° 8'.

ACTUAL TEMPERATURES.—

LONDON.—December 12 (6 P.M.): Max. 57°; Min. 51°.
December 13—Dull, rain, warm.

PROVINCES.—December 12 (6 P.M.): Max. 54°, Home Counties; Min., 47°, Shetland.

Fruit Industry in West Australia. A FEW years since, information as to fruit-growing in the auriferous colony, as some term West Australia, was very meagre, simply because there was little to report upon—orchards here and vineyards there, with occasional visits from experts from other colonies; the work of importing in large quantities going on side by side with endeavours to substitute home-grown for exterior supplies. Year by year the imports have given way before the well-directed and plucky efforts of intelligent enterprise, and to-day we learn from a just-published report that there are something over 4,000 individuals engaged in Vine and fruit-growing in the colony. Large numbers of new varieties of Vines have been imported from France and the United States. The Vines include some of the choicest varieties of French wine Grapes and table Grapes from California, and also of phylloxera-resisting varieties.

Pippin fruit still retains the lead among the fruit crops of the colony—a fact due to the extraordinary suitability of the colony to the production of Apples, Pears, Quinces; and also to the fact that Western Australia, unlike the Eastern colonies, is still absolutely free from the Codlin-moth. As to the importation of fruit-trees and plants, the colonial horticultural expert makes the following remarks:—"This year again, and to a much more noticeable extent than the previous year, the returns show a total decrease in the number of cases of fruit imported. There was in 1898, as compared with 1897, a decrease of 6,592 cases; in 1899, when compared with 1898, the decrease was three times as large, or 18,531 cases. The decrease is noticeable in all classes of fruit except Cherries (530 cases), Gooseberries (209 cases), and Rhubarb (59 cases). The importation of Grapes, which in 1897 amounted to

1,804 cases, was only normal in 1899, consisting of 22 cases. Apricots, of which 380 were introduced in 1898, came down to 189 cases last year. Of the other fruits in proportion, and notably Oranges, Plum, and Passion-fruit, the number of cases imported last year was only half, as compared with the previous season.

When, on the other hand, the importation of fruit-trees and plants is considered, although there is an increase of 44,585 as compared with the previous year, this increase is in reality fictitious, being more than accounted for by a decrease of 113,301 in the importation of Vine-cuttings, together with a few hundreds of Apricots, Mulberries, and Almonds. We find, on the other hand, a marked increase in the number of Apple-trees imported—9,009; Lemons, 11,054; Oranges, 10,566; Pears, 5,599; not to speak of Cherries, Figs, Nectarines, Plums, small fruit, and others, which altogether show an increase of 23,000, when compared with 1898.

From these figures it is reasonable to infer that the importation of fruit is decreasing, and as the population is increasing, and prices are lower, the local production of fruit must be progressing rapidly. The importation of fruit-trees, on the other hand, is increasing, and as the resources of the local nurseries were also severely taxed last year, it is natural to infer that the acreage under fruit-trees during 1899 must have been materially increased.

Several consignments of fruit have reached London from Perth, some having been sent as common cargo, the chances of success for this class of shipment being enhanced by the fact that the duration of the voyage is considerably less than that sent from the Eastern colonies.

*** * OUR ALMANAC.**—According to our usual practice we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1901. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical, and allied Societies, or any of our correspondents, will send us immediate intimation of all fixtures for the coming year.

LINNEAN SOCIETY.—On the occasion of the evening meeting held on Thursday, December 20, 1900, at 8 P.M., the following papers will be read: 1. "On the Structure and Habits of the Ammocharides," by Mr. ARNOLD T. WATSON, F.L.S., &c. 2. "The Flora of Vavau, one of the Tonga Islands," by Mr. T. H. BURKILL, M.A., F.L.S. 3. "Warning Colours in Insects," by Prof. E. B. POULTON, M.A., F.R.S., F.L.S.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Fruit and Floral and Orchid Committees will be held on Tuesday, December 18, in the Drill Hall, James Street, Westminster, at noon. The Scientific Committee will be held at 4 P.M. The show will last from 1 to 4 P.M. An election of new Fellows will take place at 3 P.M.

"THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY."—A double part has just been issued under the editorship of the Rev. W. WILKS. The contents are varied and interesting, some of the papers being of such a character as to be of permanent value. The part is copiously illustrated by reprints from the horticultural papers, and there are three excellent portraits of the President, Treasurer, and Secretary. The tail-pieces are mostly poor and apropos of nothing, and would in our opinion be better omitted.

NATIONAL HORTICULTURAL SOCIETY OF FRANCE.—A general meeting of the Society for official business, will be held at 84, Rue de Grenelle, S.G., Paris, at half-past 2 P.M., on Thursday, December 27.

SEED CATALOGUE.—The Directors of the Museum d'Histoire Naturelle, Paris, have issued their catalogue of seeds available for exchange. Applications should be made to M. le Directeur du Museum, 57, Rue Cuvier, Paris.

A WONDERFUL IRIS.—Mr. PETER BARR writes to us from Victoria, regarding a new German Iris staged by Miss LOVE at a local show:—"Those who visited the Tatura show on Wednesday, October 17, must have seen Iris Painted Beauty. It was conspicuous in the fine, but crowded, box of cut flowers staged by Miss LOVE, of Tatura, and was, during the day, the cynosure of the exhibits. Its beauty was of a very exceptional, marked, and distinct character. An expert gave it as his opinion that no Iris of so much refined beauty had ever before been seen in this or any other country. It belongs to the group commonly known as German Iris. The flower is pure white.

LARGE SHIPMENT OF APPLES.—We learn from Boston, U.S.A., that some two or three weeks since the largest shipment of Apples on record was made from that port for Liverpool. This shipment consisted of 28,285 barrels of all the best varieties suited for the Christmas market.

NATIONAL DAHLIA SOCIETY.—We are desired by Mr. J. F. HUDSON (Hon. Sec.) to state that a committee meeting will be held, by kind permission of the Horticultural Club, in the Club Room at the Hotel Windsor, Victoria Street, Westminster, S.W., on Tuesday, December 18, at 2 P.M.

EDINBURGH SEED TRADE ASSISTANTS.—This very enthusiastic and harmonious body held their customary annual dinner in F. & F.'s rooms, 129, Princes Street, on Friday evening, 7th inst.

MR. C. WHITEHEAD, F.L.S., F.Z.S.—The retirement of Mr. CHARLES WHITEHEAD, F.L.S., F.Z.S., from the position of Technical Adviser to the Board of Agriculture has led to a reconsideration of the means by which the Board obtains technical advice on questions relating to agricultural botany and economic zoology; and it has now been arranged that the scientific and expert assistance required by the Board in connection with these subjects shall be furnished respectively by the Royal Botanic Gardens, Kew, and by the Natural History Departments, South Kensington.

"BOTANICAL MAGAZINE."—The December number contains coloured illustrations of the following plants:—

Adesmia boronioides, Hook. f., t. 7748.—A dwarf hardy evergreen from Patagonia, more or less densely covered with viscid glands, with narrow pinnate leaves, pinnæ rounded, crenate; flowers yellow, pea-shaped, in terminal racemes, each flower about half an inch long.

Dasyliiron quadrangulatum, S. Watson, t. 7749.—A Mexican species with a contracted stem, from which issues a dense tuft of long (2 feet) linear quadrangular leaves. Panicle many-flowered, on a long central stalk; bracts 6 to 8 inches long, ovate acuminate, spathaceous, deciduous; flowers greenish, small; ovary deeply three-winged, one-fifth of an inch long.

Dendrobium spectabile, Miquel, t. 7747.—A New Guinea species, figured from Mr. BENNETT POE'S garden. See also *Gardeners' Chronicle*, 1899, ii., 491, f. 162.

Matthiola coronopifolia, De Candolle, t. 7750.—A cruciferous perennial with pinnately-lobed leaves, covered with hoary down; flowers rather more than an inch across, in terminal racemes; petals spreading, undulate, violet. The plant is a native of Sicily.

Passiflora capsularis, Linnæus, t. 7751.—A pink-flowered species, with two-lobed leaves, the lobes lanceolate, widely divergent.

CYCLAMEN, ABNORMAL FORMS OF.—The stem of a Cyclamen is represented by the globose corm from which leaves and flower-stalks proceed. As if to show its stem-like character, Cyclamens sometimes produce erect branches bearing leaves and flowers, completely altering the character of the plant. One such is before us, which was sent us by a correspondent as a "tree Cyclamen." The central stele was in section in the form of an unbroken ring. The Cyclamen shown by Mr. KER at the last meeting of the Royal Horticultural Society was remarkable for the multiplication of the petals, which were all free to

at the base of the calyx, the angles of the pentagon corresponding to the sepals. A section higher up showed five petalline bundles alternating with the outer ones. Numerous smaller bundles originated by chlorosis from the larger ones.

SUGAR-BEET.—The University of Illinois Agricultural Experimental Station has lately published a very valuable account of the numerous insects which attack the Beet, and of the best methods of combating them. The report is written by Dr. STEPHEN FORBES, the State Entomologist, and is a model of what such reports should be.

seen by Mr. ELWES. At any rate, residents in the district will do well to look out for this handsome plant, and send rhizomes to Mr. ELWES, Colesborne, Andoversford, near Cirencester; or to the Royal Gardens, Kew. There is, it appears, a large number of undescribed species still to be introduced.

BARONESS SCHRODER.—The death of this lady at The Dell, Englefield Green, on the 5th inst., is announced. The Baroness was in her seventy-third year. The greatest sympathy will be extended to the Baron in his bereavement.



FIG. 136.—HARDY RHODODENDRONS AT TREMOUGH, CORNWALL. (SEE P. 440.)

the base. The stamens were absent, but the ovary was perfect. This was no mere replacement of stamens by petals, as the additional petals were very numerous. From the Royal Gardens, Kew, come flowers of precisely similar character, together with others of an equally remarkable character. These latter flowers were flat, nearly circular; the petals distinct, spreading, white, with a rosy-lilac blotch at the base. Within the first row of petals was a second row like the outer ones, and alternating with them. There were five stamens, alternate with the innermost petals, and quite detached from the corolla. The ovary was normal. The fibro-vascular bundles were arranged in a pentagon

HEDYCHUM ELWESII.—Mr. ELWES calls attention to a species of *Hedychium* which he discovered in company with Mr. C. B. CLARKE, in 1886, near Bishop's Falls, Shillong, Assam. It has a crimson flower as large as that of *H. Gardnerianum*, and is by far the finest species of the genus. Mr. ELWES is very desirous of obtaining the plant, but hitherto his efforts have been unsuccessful. There seems to be some doubt as to the identity of the plant, as the flowers of *H. Elwesii* are described by BAKER in the *Flora of British India* as yellow, but that may have arisen from the examination of dried specimens. *H. Cathcarti* is another crimson-flowered species growing at Shillong, which may be the plant

MR. J. H. BURKILL, an assistant in the Herbarium at Kew, and formerly in that at Cambridge, has been appointed assistant to Dr. WATT, the Reporter of Economic Products, Department of Agriculture, in Calcutta, and will leave this country in January next.

STOCK-TAKING: NOVEMBER.—The great features of the past month's trade are the large increase in the volume and value of the imports, and the decrease in the value of our exports. The imports show an increased value of £5,488,919, the exports have increased for the month by only £52,709. The total value of the imports is

£49,733,730, against £44,244,811 for the corresponding period last year; hence the increased value. But here we may check off our usual extracts from the "summary" table for the month as follows:—

IMPORTS.	1899.	1900.	Difference.
	£	£	£
Total value ...	44,244,811	49,733,730	+5,488,919
(A.) Articles of food and drink—duty free ...	14,862,986	16,308,279	+1,445,293
(B.) Articles of food & drink—dutiable	2,787,304	2,924,874	+137,570
Raw materials for textile manufactures ...	7,130,831	10,170,972	+3,040,141
Raw materials for sundry industries and manufactures	5,178,002	5,171,637	—6,965
(A.) Miscellaneous articles ...	1,858,278	1,731,301	—126,977
(B.) Parcel Post ...	105,736	115,399	+9,663

The greatest increase is in Cotton—£3,850,729; then cereals and food stuffs generally show a rise, the rear being brought up by a rise in timber (over £450,000). Perhaps not quite unconnected with the matter of "death in the pot" (of beer) is the large increase in the value of Hops and Tea imported during the past month; and the children have reason to be glad and rejoice in the great quantities of Christmas wares to be committed to the care of Santa Claus. Christmas wares are to be found in great quantity in the following table relating to fruits, roots, and vegetables:—

IMPORTS.	1899.	1900.	Difference.
	Bushels.	Cwt.	Value.
Fruits, raw:—			£.
Apples ...	765,477	574,448	+77,932
Apricots and Peaches .....	.....	.....	.....
Bananas... bunches .....	.....	84,704	+35,352
Grapes	159,156	130,405	+49,082
Lemons	80,710	75,403	+14,083
Nuts—Almonds (cwt.)	31,818	26,098	+16,661
Others, used as fruit (value)	£120,756	£159,112	+38,356
Oranges	732,921	333,475	—57,396
Pears	28,904	34,711	+11,116
Plums	1,436	45	—622
Unenumerated... ..	104,331	11,526	—45,560
Fruits, dried:—			
Currants, home consumption ... cwt.	202,697	78,531	+7,011
Raisins	137,830	123,003	—46,680
Vegetables, raw:—			
Onions bush.	648,056	716,368	+7,771
Potatoes cwt.	1,351,668	1,606,816	+250,266
Tomatoes ... ..	...	36,906	+36,998
Vegetables, raw, unenumerated value	£112,231	£65,636	—46,595

Some of the pluses in the above columns are very suggestive—our readers can work them out for themselves. Currants included. We have not yet heard anything relative to the new subsidised line of West Indian fruit-ships; it will be interesting to observe the effect on markets here and on the prosperity in the colonies in question. The value of the imports for the past eleven months is £267,839,334, against £242,623,158, or an increase of £25,217,176. A cursory examination of the—

EXPORTS

prove conclusively to us, and to most folks, that war is a great enemy to industrial progress. But for that, our figures to-day would doubtless have been millions in excess of what they are. Last month the value of exports was £24,624,649, against £24,571,940 for the corresponding period last year—or a gain of only £52,709. Coal showed a very large increase in value, but a corresponding fall in the value of ships built for foreign owners cleared that gain off the slate, and so the matter stands.

Of course, there is a large amount of material awaiting the advent of peace ready for exportation: meanwhile, manufacturers at home have their hands somewhat tied by the delay incident to what is termed rounding off the campaign in South Africa, and the settlement of preliminaries with the Chinese authorities. We can only hope for an early all-round settlement, and then for an alteration in the figures. The exports for the past eleven months foot up at £267,839,334, against £242,623,158—a gain of £25,217,176.

RHODODENDRONS AT TREMOUGH.

IN the gardens of D. H. Shilson, Esq., at Tremough, Cornwall, is to be seen the most representative collection of Himalayan Rhododendrons, and hybrids of the same section, in the British Isles. Many of the largest specimens, some of which have attained a height of about 30 feet, were raised from seed brought from the Himalayas by Sir Joseph Hooker, and presented by him to the father of the present owner of Tremough. Kew has been enriched in its turn by a fine assortment of Rhododendrons from the Tremough gardens, six truckloads of large bushes having been lifted under the superintendence of Mr. Watson, of the Royal Gardens, and safely transported to the Temperate-house, where they may now be seen in the best of health by visitors to those famous metropolitan gardens (see *Gard. Chron.*, January 7, 1899, fig. 2). At Tremough, near the southern coastline of Cornwall, the robust health exhibited by the Rhododendrons in the open air is sufficient evidence that, in that equable climate, glass protection is happily unnecessary. Peat is afforded when planting, but the seedlings evidently appreciate every whit as much the subsoil of gravelly loam, which is eagerly laid hold of by their spreading rootlets. In order that full justice should be done to the charms of this unique garden, several visits during the spring of the year are requisite, since the blooming periods of the various species and hybrids are not simultaneous. Perhaps the finest display is provided during the month of April, when hundreds of noble Rhododendrons are smothered with blossom. These chiefly consist of the Himalayan species, together with innumerable hybrids.

The drive to the house is edged with *R. ciliatum*, backed by splendid specimens of *R. arboreum* and others. On the right, towers an enormous *R. arboreum* roseum, shown in the centre of one of the illustrations (fig. 136), 25 feet in height, and 30 feet through. The trunk of this giant is, a little way above the ground, divided into three stems, one of which is 3 feet in circumference. On the left hand is *R. arboreum* cinnamomeum, and on the right a hybrid arboreum.

In another part of the grounds is a tall specimen of *R. arboreum* roseum fully 30 feet in height, while examples of *R. arboreum* album and *R. arboreum* cinnamomeum exceed 20 feet in height in some instances, the latter having a very protracted season of bloom, being in flower for two months. The largest specimen of the crimson-flowered *R. barbatum* is 15 feet high and 30 feet through; while *R. Shilsoni*, a hybrid between *barbatum* and *Thompsoni*, raised by the late Mr. Shilson, is represented by several fine bushes. The flowers of this hybrid are deeper in colour than those of *R. barbatum*, and larger, being over 2 inches in diameter. A flesh-coloured variety of *R. barbatum*, 15 feet in height and nearly 30 feet through, with beautifully-shaped trusses of softly-tinted blossoms, forms a most attractive picture; while the scarlet-flowered *R. fulgens*, 10 feet in diameter, *R. ciliatum*, of which species the largest example is 6 feet in height and 17 feet through, the magenta-hued *R. niveum*, that takes its specific name from the white reverse of its leaf, and is represented by a bush 15 feet high and as much in diameter, *R. argenteum*, *R. Cunninghami*, bearing very large, pure white flowers, and the hybrid Mrs. Henry Shilson, with enormous trusses of soft

pink bells of great size, are, one and all, objects of great beauty and interest.

Hybridising has been consistently carried on ever since the time that the late Mr. Shilson started his collection of Himalayan Rhododendrons; and the head-gardener, Mr. R. Gill, is able to point with pride to numerous lovely hybrids of his own raising. At the date of my visit, many of these were blooming for the first time, amongst them was a batch of Thompsoni hybrids bearing handsome flowers, a *barbatum* seedling with a fine conical truss of rose-pink blooms splashed with crimson, the petals being much reflexed and of great substance; a seedling arboreum, white with rose spots; another, flesh-tinted, and a third unnamed arboreum seedling bearing large flowers of a light pink hue, profusely spotted, the individual blooms being nearly 4 inches in diameter. Many other seedlings equally worthy of note with those above mentioned were comprised in the collection, but the time at my disposal admitted of but a cursory view.

All the species and hybrids above enumerated were in full bloom in the third week of April, and are at their best at a considerably earlier period in less backward seasons than the past spring. Later on, other and even nobler species reveal their beauties, amongst these being the queen of Rhododendrons, *R. Griffithianum*, *R. Aucklandi* of gardens. Of this glorious plant the largest specimen is 15 feet in height, and 13 feet through, and is, in its flowering season, a perfect cloud of white, it having during the past season borne over 400 bloom trusses. The individual blossoms are from 5 to 6 inches in diameter, and are produced in clusters of from four to eight. In the bud state they are of a pinkish tint, but are pure white when expanded, and very sweetly scented (see *Gard. Chron.*, November 24, 1884, fig. 113). The leaves are noble in form, and are often 10 in. in length. There is also a good specimen of a pink form of *Aucklandi*, and a hybrid between *Aucklandi* and *Thompsoni*. There are several large examples of *R. Falconeri*, the finest of which is 15 feet in height, and 28 feet through; while *R. Dalhousiae*, *R. campanulatum*, *R. Standishi*, *R. campylocarpum*, *R. cinnabarinum*, *R. Roylei*, *R. Gibsoni*, and *R. Hodgsoni* are also well represented. In the most exposed situations the hardier section of Rhododendrons, introduced at a far more recent date than the Himalayan species, which are ill-adapted to such sites, have been planted, and are doing well.

In the conservatory, amongst a fine collection of flowering plants, were *Rhododendron alabacens*, with large, widespread, fragrant blossoms of snow-white; *R. fragrantissimum*, *R. Lady Alice Fitzwilliam*, *R. Sesterianum*, and *R. Williamsii*; also the handsome, brilliant red *Camellia Mathotiana*.

In the open, Camellias grow like Willows, and splendid bushes meet the sight on every side. *Azalea indica* also flourishes in the most robust of health, and a long and wide bank is covered with the white variety which blooms profusely in the late spring.

At the side of a lawn, on a bank at the foot of some Elms a few corms of *Cyclamen Coum* were planted about thirty years ago. These have now spread over the whole bank, and across the gravel path into the adjoining tennis-lawn, where, though regularly mown down, small plants are to be found in hundreds.

About ten years ago an extensive alteration in the grounds was carried out, and numerous Conifers were planted. These have made fine growth, and bid fair to become one of the features of the gardens, *Abies nobilis*, *A. firma*, *A. Nordmanniana*, *Picea polita*, and others already providing many symmetrical specimens.

Embothrium coccineum, a subject to be met with in every garden of note in southern Cornwall, and without doubt by far the most brilliant of all spring-flowering trees, is represented by several healthy examples (see *Gard. Chron.*, Oct. 18, 1884, fig. 88, p. 480); while fine effects are afforded by large

beds of *Yucca gloriosa*, which has flowered with unusual abundance this season, and *Arundo conspicua*.

A pretty spring picture is obtained from Daffodils and *Triteleia uniflora* planted on grassy banks, the white stars of the latter flower quite hiding the sword beneath. In one of the walled kitchen-gardens, used for the most part as a nursery for seedling *Rhododendrons* and *Azaleas*, there was a fine show of healthy young plants, *R. Aucklandi* and *R. Falconeri* being readily recognisable amongst them. In the same garden *Freesias* were in fine flower in the open, as were *Persian Cyclamens*, one of the blooms of the latter that I measured being $4\frac{1}{2}$ inches in diameter across the extended petals. *S. W. Fitcherbert.*

THE WEATHER IN WEST HERTS.

THE past eight days have been exceptionally mild. On seven of them the highest shade temperature exceeded 50°. Four of the nights were

twelve days only amounted to about a quarter of an hour's sunshine a day. The same twelve days were very humid, the mean amount of moisture in the air at three o'clock in the afternoon being 92 per cent., against 86 per cent., which is the mean amount for that hour in December. *E. M., Berkhamsted, December 11, 1900.*

LAW NOTES.

THE BURGH OF LEITH v. WILLIAM McROBBIE.

IN the Sheriff's Court at Leith, Edinburgh, on Tuesday, 11th inst., Sheriff-Substitute Maconochie gave judgment in a case raised by the local authority of the Burgh of Leith against William McRobbie. The local authority alleged that McRobbie was using certain cellars in various parts of the town for Mushroom-growing, that the cellars were in proximity to, and below the level of dwelling-houses, and contained accumulations

time, and made enquiries at the neighbouring tenants whether they had to complain of any odour from the Mushroom-beds; that he failed to detect any himself in his subsequent visits, and that the various tenants assured him they had no cause to complain. Further, he reported that under these circumstances he considered that the trade of Mushroom-growing in the three localities complained of was carried on in a wholesome manner, and did not create a nuisance as alleged.

Sheriff Maconochie has now assoilzied McRobbie with expenses. The matter has excited considerable local interest.

PLANT NOTES.

CROCUS NIVEUS.

I KNOW no reason why this name should be given to *C. Marathonisius*, for what I sent to the Royal Gardens, Kew, is certainly *C. Marathonisius* of



FIG. 137.—TREMOUGH, CORNWALL. (SEE P. 440)

also singularly warm, indeed, warmer than what may be regarded as a seasonable temperature in the middle of the day. On one night the thermometer on the lawn never fell lower than 47°, making this the warmest night, with one exception (1898), as yet recorded here in the same month. The ground also is now very warm, the temperature both at 1 foot and 2 feet deep being about 5° in excess of the December average. Rain has fallen on all but one day during the present month, and to the total depth of rather more than an inch. In the same period about 5 gallons of rain-water have come through both the bare and turfed soil percolation gauges. During the evening of the 5th, the wind, which had been previously quite light, veered from south to west, and in a few hours was blowing with the strength of a gale. At midnight the record for the previous hour showed a mean velocity of 30 miles, direction W.N.W. This is the highest wind that has been experienced here since March 24, 1895. On the 10th the sun shone brightly for four hours, but the average record for the previous

varying in quantity from time to time of stable-manure, which persistently polluted the atmosphere with gases due to fermentation, and the soil with decomposing organic refuse, and that the process of Mushroom-growing as carried on was a nuisance, or injurious or dangerous to health within the meaning of section 16 of the Public Health (Scotland) Act, 1897, sub-sections 1, 5, and 6.

On November 13 the Sheriff-Substitute refused McRobbie a proof, and remitted the matter to Sir Henry D. Littlejohn, M.D., Medical Officer of Health of Edinburgh, for examination and report. Having examined the place where the manure is prepared or "sweetened" at a considerable distance from dwelling-houses, and the three cellars where the business is carried on, he reported that the vaults or cellars appeared to him to be well suited for the purpose; that he could detect no objectionable odour either within or without the respective premises; that he had, since his first examination, inspected the localities from time to

Heldreich, having passed through the author's own hands. Mr. Maw, although regarded as the highest authority on *Crocus*, is not infallible; and so good a botanist as Professor von Heldreich had certainly reason to separate this from *C. Boryi*. Mr. Maw states that *C. Boryi* is one of the few *Crocuses* having white anthers; those of *C. Marathonisius* are yellow. I send for your inspection blooms of *Marathonisius*, and of the pencilled variety of *Boryi*. *Max Leichtlin, Baden-Baden.*

TRADE NOTICES.

MESSRS. DICKSON & SONS.—The old-established firm of Alex. Dickson & Sons, seed merchants and nurserymen, of 55, Royal Avenue, Belfast, and The Royal Nurseries, Newtownards, has recently been registered as a private limited liability company. It is not intended to offer any of the shares to the public, and the conversion has been

effected principally with regard to family arrangements, and to facilitate the control of the extensive business which is now carried on by the company.

REMOVAL.—Mr. W. H. Hudson, of Kilburn, wishes it made known that he has removed his warehouses for Bulbs, Seeds, Fertilisers, &c., to 34, High Road, Chiswick, where all letters should be addressed. The retail branch will be conducted at Kilburn as heretofore.

HOME CORRESPONDENCE.

LABELS AT KEW.—The brief but appreciative note on labels in a recent number of your paper opens up a subject of more importance than might at first appear, and many of your readers must heartily join with you in the vote of thanks to the authorities at Kew for the thoroughness with which they carry out this, and in fact all the other details of these world-famous gardens. Thoroughness appears to be the keynote at Kew, and permeates all departments alike; so that the most remote corner or the most apparently trivial detail gives a sense of satisfaction to the observant visitor to this temple of Flora. Having had the pleasure of visiting these gardens several times, I cannot help frequently contrasting this praiseworthy attention to the detail of labelling with the perfunctory manner in which the subject is treated in some other botanic gardens. Though there is every appearance that this has in some gardens at one time been well seen to, as attested by the many more or less legible names still to be met with, but, as frequently occurs, lying detached from the subject it once adhered to. It is true the flower borders in some places are freely studded with labels indicating the site of some Tulip or Iris that may or may not put in an appearance. With respect to trees and shrubs, there is especially much to be desired as regards labelling. At this season, when the Arbutus trees are attractive by reason of the abundance and beauty of their fruit, one may observe visitors wandering round and round a tree, and from one to another, in vain endeavouring to find a name to "handle" it by. I would venture to say that if a tree is not worth its label, still less is it worth its room in a botanic garden. I don't mean to apply this hard saying to every individual of an avenue or clump where it consists of one species, for here their proximity facilitates the matter. *B. W. B.*

THE PENSHURST LEECH.—With reference to the species of leech which has appeared in the gardens at Redleaf, Penshurst, and which was brought to notice by Mr. Ringham in your issue of November 3, the illustration given shows the creature to be longer than the common Himalayan ground-leech, but it evidently belongs to the same section of the tribe. Our species is one of the most troublesome pests in the monsoon months to the botanist or sportsman who have occasion to go into the jungles. As with the mosquito, our ground species chiefly feeds on vegetable matter, but when it has the chance it attaches itself to both men and animals. In tramping through the jungles, particularly at elevations of 3,000 feet to 5,500 feet, the bare legs of the coolies get covered with the creatures, and unless they are detached the bitten spot bleeds profusely. With the better-clad Europeans, the creature finds its way to one's feet through the eyelet-holes of one's boots, and through thick, woollen garments if the cloth is not of a close texture. In the case of animals, they attach themselves to the legs chiefly; and in the case of cattle, they find their way into the nostrils and remain there for months, defying extraction. Ordinarily, the species is from $\frac{3}{4}$ to $1\frac{1}{2}$ in. long, and not much thicker than a good-sized darning needle; but when it effects a lodgment in the nostril of a cow, I have seen it 4 to 5 inches long, and as thick as one's thumb. The bite is perfectly painless, but a day or two after the bite occurs the bitten parts become inflamed and itch terribly. If at this stage the skin is broken by scratching or otherwise, the wound resolves itself into a sore which is very difficult to heal. It is, therefore, somewhat of a mixed blessing to hear of a ground-leech breeding in England. If Mr. Ringham is wise, he should promptly execute his interesting visitor whenever he meets with him. If the species should prove to be as bad a pest as the Himalayan species, the

gardens at Redleaf will not be a desirable place of perambulation should the creature obtain a firm foothold. *W. Gollan, Superintendent, Government Botanic Garden, Saharanpur, N. W. P. India, November 21, 1900.* [We think the term leech is used improperly in the case of this Planarian. *Ed.*]

FLOODED FOREST LAND.—The account by Mr. Divers (in a recent issue) of the Oaks at Belvoir Castle, showed that the trees were benefited by the occasional flooding of the valley. The height to which the floods rise is of no account, excepting that the greater the depth the longer the time necessary to free the surface of water. I have seen forest land in Austria flooded by the waters of the Maros, a tributary of the Danube, for the entire month of June, on the melting of the snow in the Carpathian Mountains. In some years the water rose to about 4 feet, and of course the land was saturated to a great depth; but the Oaks and Hornbeam, both young and old plantations, did not suffer in any way—rather the contrary. In spite of this abundance of water when it was most required, and the heavy snowfall in the winter, stagheadedness was noticeable in all the Oaks that were 150 or more years old, so that it may be assumed that this malady is rather the consequence of age in the trees than of a bad state of the roots



FIG. 138.—BEECH HEDGE AT MEIKLOUR, PERTSHIRE.
(SEE P. 436.)

brought about by the poverty or waterlogged nature of the soil. The roots of an Oak or Hornbeam do not go deeper than 4 feet, keeping mostly between that depth and the surface, especially in soils naturally moist or kept moist by a sufficiently widespread canopy of foliage. After flooding, the land would dry naturally, the water finding its course through innumerable channels to the level of that in the adjacent streams. The same thing would, if I remember rightly, occur at Belvoir. *M.*

CLEMATIS SONGARICA.—The note on Clematis grewiaeflora (p. 420), which flower I have never seen, leads me to ask if any of your readers know of Clematis songarica growing in the open in this country? The species is not mentioned in either of the botanical dictionaries I possess, but was alluded to by Dr. Jules Le Bele in vol. xii. of the *Bulletin of the Horticultural Society of Sarthe* as having been lost by him. In October, 1899, I saw a plant reputed to be of this species flowering on a house-wall in South Devon. The flowers were yellow, and very similar in shape to those of *C. graveolens*, which was in bloom on the same wall, but far smaller. Not having visited the garden in question this year, I am unable to say whether the plant is still alive. At the time I saw it, it looked perfectly healthy, and had made vigorous growth. I have never met with it in other gardens in the south-west, though it is quite probable that some of these may contain established

specimens. If it be hardy, it adds another species to the four mentioned by Mr. Burbidge, viz.:—*C. graveolens*, *C. grewiaeflora*, *C. cirrosa*, and *C. calycina* or *balearica*. The two latter I saw covering an archway in southern Cornwall, and, both being in bloom, the difference between the flowers of the two species was at once apparent. Both were of an almost similar shade of greenish-white, but the blossoms of *C. cirrosa* were smaller and unspotted, while those of *C. calycina* were spotted with purple in the interior. The foliage also was quite distinct, that of *C. calycina* being much divided, while the leaves of *C. cirrosa* were composed of three oval segments slightly indented. The figure of *C. cirrosa* given in Nicholson's *Dictionary of Gardening*, appears to me to be that of *C. calycina*. The latter plant is common in the south-west, covering evergreen-trees with its growth, but *C. cirrosa* is more rarely met with. *S. W. F., South Devon.*

MRS. BRYANT CHRYSANTHEMUM.—Your correspondent, "C. H.," in last week's issue, made some interesting remarks upon seedling Chrysanthemums at Greenlands, Henley-on-Thames. But he is wrong in stating Mrs. J. Bryant to be a seedling of Mr. Perkins. This gentleman certainly received a Certificate for it; but as I raised this variety in 1897, and it was shown at the National by Mr. H. Love in 1898, and sold to Mr. Jones, of Lewisham, I feel I ought to claim my rights. *J. Bryant, gr., Gothland Villa, Sandown, I.O.W.*

FERTILISATION OF PEAS.—Adverting to the paragraph relating to the pollination of *Pisum sativum*, on p. 420 of the *Gardeners' Chronicle* of last week, it may be of interest to state that, on one occasion, I saw four distinct, well-ripened seeds taken from one "pod." These were green and white wrinkled, and green and white round forms, and they certainly were not derived from artificial crossing. A reader of the *Gardeners' Chronicle*, residing at Bedford, may perhaps remember this circumstance as occurring in another seat of learning. *J. E. J.*

SPECIES V. VARIETIES.—I have read with much interest the article on "Variations in *Eoothera Lamarckiana*," which appeared in the *Gardeners' Chronicle* of December 1; but surely the definition of a species therein formulated is open to question. The first two conclusions arrived at are:—1. "The new species appear suddenly, without intermediate or preliminary forms; the transformed individual displays all the characteristics of the new type, although itself the issue of perfectly normal parents or grandparents." 2. The seeds of transformed individuals all show the new type, without any reversion (to the characteristics of *E. Lamarckiana*). They remain fixed from their first appearance. *They may therefore be considered a new species.* The italics are mine. Now, if this conclusion be accepted, *Athyrium filix-femina* Victoriae, to take one type of so-called varietal Ferns among many, answers exactly in all respects to the requirements of a new species; the sole point which cannot be proved is, that it is the issue of perfectly normal parents and grandparents, though the utter failure to find any intermediate forms, both in the locality and elsewhere, and the multitude of other "sports" which have arisen without any intermediate grades being found, must be admitted as strong evidence of such a normal origin of this and other marked deviations. In all the other points there is absolutely no question, its pericardiate and crested character appears in all its seedlings, i.e., "all the characteristics of the new type," and "without any reversion," and it has "remained fixed from its first appearance." This appears to me to form a precise parallel to the *E. Lamarckiana* "new species," as described by M. Hugo de Vries; but no one has yet dreamed of classifying it as other than a "variety," and save for its unique form, I might class it with scores of other wild finds, which equally fulfil the definition of a "new species" above formulated. In my one section of plumose *Athyria* which exemplifies a similar sudden departure in several directions from a different type, there is also exemplified a varying capacity in the individually distinct forms to reproduce themselves truly from their spores. One in particular, *A. f. f. s. dissectum*, comes as true as a die from repeated sowings, while others give constantly varied progeny. Is *A. f. f. dissectum* a new species? I think not; it is simply a constant variety, and so I contend is *A. f. f. Victoriae*. On the other hand, I admit that the definition seems

to be a reasonable one; a plant which suddenly originates of widely different structure to its parent, and capable of reproducing itself truly for an indefinite time, appears justly entitled to be classed as a species, since a species can do no more; but if this definition be accepted as conclusive, where are we to draw the line? The varietal Fern I have cited is as steadfast as any species, even to the extent of transmitting its peculiar character truly by crossing with other varieties; but its fructification remains the generic one of *Athyrium*, and in everything but

single and semi-double forms. These flowers, beautiful objects always, whatever the colour, have such an abundance of pollen, that self and cross-fertilisation where several plants are growing adjacent to each other, must occur. The pollen from single and semi-double flowered plants is, of course, all potent in setting double-flowered Camellias, which, in spite of the petaloid character of their anthers, are capable of having some that may possibly be fertilised. So much, indeed, was this the case in a collection of some 900 large

from October to May, and few horticulturists have the required quantity of glass-accommodation, or could afford the expense the cultivation up to blooming age that a numerous collection of seedlings would entail. If seedlings of single-flowered Camellias are desired to serve as stocks, for which they are very suitable, on which to summer-graft ennobled varieties, a few dozen raised yearly would suffice for the needs of the largest private garden; although, as a matter of fact, cuttings of any variety, made of three quarter-ripe shoots, struck



FIG. 139.—THE FRUIT OF CAMELLIA.

form it is the species *filix-femina*; hence, so far as I can see, it is impossible to give it other than a varietal name, despite its fulfilment of the specific requirements quoted. *Chas. T. Druery, F.L.S., V.M.H.*

THE SEEDING OF CAMELLIAS.—Given sunny weather and ample ventilation at the period when Camellias growing in a greenhouse are in bloom, the setting of the flowers is almost a natural consequence, provided there are single or semi-double varieties in bloom at the same time. If seeds be promiscuously saved, and cross-breeding with intent has not been practised, there will be in the progeny but very few seedlings that will come up to the florists' standard of a "fine Camellia," but many

and small plants, of which I had charge for 7 yrs., that a good deal of labour had to be expended in the summer months in gathering the fruits whilst still of small size, much fruit-bearing (fig. 139) tending to weaken a plant that cannot extend its roots beyond the sides of a tub or a flower-pot. In southern climes, and southern shires in this country, the Camellias live out-of-doors all the year round, and thus the cross-breeder may indulge his fancy, raising seedlings by the thousand, if he have the necessary land at command. He has only to sow in well-prepared beds in the autumn, and transplant the seedlings twice or thrice, and then leave them to flower. The case, however, is different where the Camellia must be treated as an indoor shrub, and the seedlings kept under glass

in a bed of sand, on a bottom-heat of 75° to 80°, effect a saving of two years in point of time, as compared with seedlings, and make equally as good stocks. *M.*

— I was especially interested in Mr. Bartlett's note in a recent issue of the *Gardeners' Chronicle*, from the fact that Contessa Lavinia Maggi, and several other double, often more or less deformed varieties, show a strong inclination to set fruits. The form and colour of Camellias are very much what they were fifty years ago, and the seeds are mostly produced by varieties with red and pink flowers, which seem the most liable to bear seeds, and hence Mr. Bartlett's old and most interesting facts seem like a chapter out

of a deeply interesting story. The first fact may be formulated thus:—The deeper the colour of the flower, either red or pink, the more and the larger the seeds. The next step to success is to check the regular growth, and the more severe the check short of causing injury, the more the fruits, and more showy or curious, as you cautiously call them. A curious thing as to the fruiting of these *Camellia* plants is, that one or more have grown wholly or partly in the open air. The warmer the nook or sunny wall in the open air, the more numerous the striped fruits. One wonders why the *Camellia* has not got broken up into species, with *C. tricolor* at one end of the scale and the Pompon at the other. In my experience, none could be better than that for the production of double flowers. Mr. Burbidge says:—"In my experiments I have discovered that for the production of double flowers it is important that the pollen used for impregnation should be borne on a petaloid anther—that is, an anther bearing a small petal, and that is still better if from a double flower. I have also observed that the larger and better developed this petaloid anther, the better the chance for a fine double offspring; for, as might have been expected, the anther being connected with the corolla, the number of petals would be increased by such an operation. I found also that for the most perfect and symmetrical flowers, it was better to select single flowers which were the most perfect in their petals for seed-bearers, and that single or semi-double sorts with perfect corollas, when impregnated with "petaloid" pollen, will produce double flowers of a regular formation. Of this I have the most conclusive evidence in *Camellia Wilderi*, and many other fine double varieties in my collection, which were produced from the single red and white *Camellias* fertilised by pollen from a petaloid anther of double varieties." The old pure single white *Camellia* is becoming less pure and white every year. The form when perfect is also spotless in purity, and free from red and pink or any such stain or mixture, or any such thing. As a small white, it is exquisite, and fills a niche or decoration nought else can fill. The hybridist should keep the single white *Camellia* in purity and plenty for the decorations, and should grow the red and white as dwarf standards for freshness and change. D. T. F.

RETARDING AND FORCING SEAKALE.—I quite agree with what Mr. Wythes advances, at p. 394, in favour of forcing Seakale in the open. My experience leads me to say, with Mr. Wythes, that finer and better quality examples of Seakale are obtained by forcing the plants into growth in their summer quarters, than can otherwise be secured, simply for the reason that growth, stopt well-blanching heads, is made in uniform conditions as regards heat and moisture about root and crown; these favourable conditions being produced and maintained by the judicious application of fermenting materials in the way of freshly collected leaves (Chestnut and Oak are the best), and stable-litter, in the proportion of about four parts of the former to one of the latter. The *modus operandi* which I practised in forcing Seakale and Chicory in the open during the last fifteen or twenty years I was at Longford Castle, consisted in improvised boxes about 8 feet long, 10 inches wide, and the same depth (inside measurements); the two ends of said boxes being about 1 inch higher than the sides, so as to keep the lids in position when put on before being covered with fermenting leaves (obtained from the leaf-coop) to the thickness of from 2 to 3 feet—this thickness on either side of the rows of boxes, in order to maintain the necessary degree of heat and moisture about the covered crowns. The rows of Seakale and Chicory were 15 inches apart. As soon as the leaves had died down, naturally in autumn, they were removed to the rubbish-heap, six or eight rows were covered to a length of 16 to 24 feet, according to the quantity of produce required by a certain date, a little wood-ashes being placed about the individual "crowns," before covering in the manner indicated above. About a fortnight later another section of the same rows, and in continuity with the first lot of boxes, was covered in the manner described, repeating the operation at regular intervals as desired. Sticks should be inserted in the fermenting leaves in order to test the heat, adding more leaves to increase the warmth if necessary. Uncover one of the boxes in the middle, and consequently hottest part of bed of gently fermenting leaves, at intervals of a few days after the first two weeks, in

order to ascertain whether the crowns have pushed into growth, choosing a mild or sunny day for the inspection. H. W. Ward.

BLACK MOROCCO GRAPE.—It is difficult to tell just now whether it is this Grape or Diamond Jubilee that is being so much discussed. It is but fair to say, so far as the former is concerned, whatever may be its demerits, and it looks a good deal like giving a dog a bad name, that the fruit of Black Morocco, sent by Mr. Crump to the Drill Hall at the last meeting, was capitally flavoured; indeed, no late black Grape could excel it in that respect. I regret to read the unworthy sneer at the fruit committee with respect to the first-class certificate given to Doyenné du Comice Pear. I do not think that, with the exception of the chairman, at the moment the merits of the Pear was discussed, any member knew from whom the fruits came. But whether from prince or peasant, I may tell Mr. Airdrie that the fruit committee is in relation to person impartial. Awards are made only in respect of the merits of the product. A. D.



FIG. 140.—*PLATYCERUM ANGOLENSE* ($\frac{1}{2}$ natural size).
(SEE P. 434.)

AMATEUR MARKET - GARDENERS.—No one reading the article on the above subject at p. 418, and having an interest in market-gardening, will fail to wish for a few more hints and suggestions. I am engaged in market-work, and feel emboldened to ask for advice on this subject. I believe many persons besides myself would be much gratified by the appearance in these columns of a few articles, bearing more especially on the profit and loss sides of the subject. G. T. [Our correspondent should read our Market Garden Notes published from time to time. Ed.]

THE MILDNESS OF THE WEATHER.—As illustration of the mildness of the season, I cut yesterday, the 12th inst., a good fresh flower of *Lapageria rosea*, the last of a lot of forty flowers borne this year on a plant which has stood out for the last two years, i.e., through two winters, on a S.E. wall in my garden here, having had the protection in winter of some Hop-netting. *Heliotrope* is not yet cut down by frost, and I have *Roses* and *Carnations* in bloom, and many other flowers. "Rus in Urbe," Eastbourne.

THE SEEDING OF WELLINGTONIA.—I shall be glad if any of your correspondents can tell me when the cones of *Wellingtonia*, which, I believe, very rarely mature in England, are ripe. In California they usually take a full year or perhaps eighteen months to mature. I have never seen cones in England till this year, when I observed some half-grown ones on a tree about twenty-five years old

in Earl Bathurst's grounds at Cirencester. On the same tree, and beneath it, were some old cones, not much larger in size, which had opened some time ago, but I could find no seeds in them. I have also received some much larger cones from Lord Powerscourt's, in Ireland, but these look as if they would not be ripe for some months to come. This seems to confirm the Californian experience that the cones stay unopened on the trees all the winter. H. J. Elwes, Colesborne.

CRYPTOSTEMMA LUSITANICUM.—In No. 727 of the *Gardeners' Chronicle* Mr. Gumbleton writes on *Cryptostemma lusitanicum* (p. 390, fig. 120). Perhaps I may be able to assist you to trace the history of this plant. In Bentham and Hooker's *Genera Plantarum*, vol. ii., p. 458, the South African genus *Cryptostemma* is marked with three species, "quarum una in Lusitania et in Australia inquilina." There can, I should think, be not the slightest doubt that the so-called *Cryptostemma lusitanicum* is the old and long known *Cryptostemma calendulaceum*, which the late Dr. Welwitsch enumerated in the indigenous flora of Portugal, though this is, strictly speaking, not the case. During my long stay in that country some twenty years ago, I often met with this pretty annual, which covers sandy places and fields from the seashore to a half-a-mile inland, extending over an area of more than twenty miles, from the Terra d'Arabida up to the frontier of Algarve. Sometimes the individuals are as densely crowded as the *Taraxacum Dens Leonis* on rich meadows. When in full flower this golden carpet gives a pleasant aspect to the country. In Australia, a few scattered individuals of this *Cryptostemma* were first observed in 1850; at present it has taken possession of the pastoral grounds and arable fields in South Australia, and it is said to extend 200 miles northward of Adelaide, covering even some mountainous summits. Several other South African Composites have become more or less naturalised in some parts of Portugal, for instance, *Arctotis acaulis*, *Cotula coronopifolia*, *Senecio scandens*, the latter undoubtedly a garden fugitive. Dr. E. Goetze, Griefswald.

RESERVE TREES OF THE PEACH AND NECTARINE.—I was pleased to read Mr. Markham's practical remarks under the above heading in the *Gardeners' Chronicle* for December 1st, p. 403. I have followed the practice to which he has drawn attention for a great number of years, with most satisfactory results, including not only Peach and Nectarine trees, but also Apricots, Cherries, Plums, Pears, and Figs, planting the young trees wherever space permitted of branch development for one or more years between the permanent trees, without in any way interfering with the due growth of the latter. The supernumeraries were afterwards transplanted into places previously destined for them, before they encroached on the wall-space reserved for and required by the extending growth of the permanent trees. In this way good-sized trees of approved varieties of the several kinds of fruit usually afforded wall-space, are always available to take the place of trees which have within the last few years evinced signs of exhaustion. Moreover, where several consecutive trees on a wall evince lack of vigour and fruitfulness, through age or other cause, it is a good plan to open out good-sized holes between the said trees at regular intervals, and then to plant therein young kindly-growing trees of the desired kinds and most approved varieties; burying the roots the same depth in the soil as they were before, being assured that this was the proper depth. The trees will do admirably in the mixture recommended by Mr. Markham as a rooting and sustaining medium. As the young trees extend their growth, a few of the lower branches of the condemned trees should be annually removed to make room for them, finally removing the remaining portions of the old trees altogether. In this way young-established trees are secured without any break being experienced in the supply of fruit hitherto obtained from trees on that particular length of wall. H. W. W.

CHRYSANTHEMUM "LILY MOUNTFORD."—I was much pleased with the blooms of *Lily Mumford*, exhibited by Mr. Norman Davis at the show of the National Chrysanthemum Society on November 6 last, and I had seen the plants of this variety whilst growing. The blooms shown were so fine as

to commend the variety to all exhibitors who desire to add to their collections. It is a plant of robust constitution, attaining to only middling height, and will bear liberal treatment in regard to manure. The colour is good—a dark purple, paler in the centre of the flower; the form is drooping, reflexed, and very pleasing. *W. H. L.*

ADIANTUM CAPILLUS-VENERIS BEARING SPORES.—In the early part of the year there was a correspondence in reference to the fertility of *Adiantum capillus-veneris imbricata*; and Mr. A.

point, as some of these have turned out at times to have been spores which started growing on the plant. *E. Sandford, Begnor.*

LILY RECENTLY FIGURED IN THESE PAGES.—The Lily illustrated in the number of the *Gardeners' Chronicle* for July 7, and again referred to in the last issue, is *Lilium sulphureum*, and not *L. Wallichianum*. Between these two Lilies (although so very distinct) a good deal of confusion prevails, and it originated in the following manner. When first flowered in this country, which was with

acknowledging it as a distinct species. Between these two periods, however, several introductions had reached this country, and disposed of either as *L. Wallichianum superbum*, or *L. ochroleucum*; and when the name was changed the fact was at once recognised by some cultivators, while by others it was allowed to remain as originally received—hence the confusion. The typical *L. Wallichianum* is a slender growing form of the longiflorum group, with long, narrow, tube-shaped, pure white flowers. The bulbs, too, are yellowish as in *L. longiflorum*. *L. Wallichianum* has been long known in this country, but it is to-day quite a scarce Lily, as in common with some other Indian species, notably *L. neilgherrense*, *L. polyphyllum*, and *L. nepalense*; it does not readily conform to cultivation, and here the bulbs rapidly deteriorate. On the other hand, *L. sulphureum* is far more robust growing, and will sometimes reach a height of 6 feet, or even more. The stem is very thickly clothed with narrow leaves, which are somewhat shorter, and of more substance than in *L. Wallichianum*. They are, in addition, when young tinged with reddish-brown, while they gradually become broader towards the top of the stem. A peculiar feature of this Lily, which causes it to stand out unique among the Eulirion or tube-flowered section, is the formation of bulbils in the axils of the leaves, such as are borne by the Tiger Lily. These bulbils afford a ready means of increase, as they grow freely when placed under favourable conditions. In bulbs, too, these Lilies differ widely, for those of *L. Wallichianum* are as above-mentioned of a yellowish tint, while in *L. sulphureum* they are of a reddish-brown or mahogany colour. This last-mentioned is a native of Upper Burmah, and grows frequently in company with *L. nepalense*. The bulbs of the two cannot with certainty be distinguished from each other, hence when collected in a wild state they are sometimes sent to this country in a mixed condition. The flowers too are, as stated on p. 420, of a pretty honey-yellow, except towards the outer edge of the segments, which is milk-white. The exterior of the blossoms is tinged with reddish-brown. The above will, I hope, enlighten your correspondent as to the true name of his beautiful and distinct Lily, which in England is hardly only in particularly favoured districts, and in common with *L. Wallichianum*, *L. neilgherrense*, *L. nepalense*, and *L. polyphyllum*, must in a general way be regarded as a greenhouse subject. *Lilium.*

—Referring to the letter of Mr. Thos. Cranwell in a recent issue, may I be allowed to state that the Lily figured in your issue of July 7 last was *Lilium sulphureum* syn. *ochroleucum* syn. *Wallichianum superbum*, introduced from Burmah by Messrs. Low. The latter name is the one generally used. The description given on July 7 is that of *L. Wallichianum*, a rare Himalayan Lily with large white flowers. There is really no affinity between the two Lilies, and it is a pity that the name *Wallichianum superbum* has become recognised; and in this case as well as others it frequently leads to confusion. Mr. Cranwell's description of his plant compares so exactly with that of the Burmese Lily that there is no doubt but that is what it is. *R. W. Wallace, Colchester.*

—The Lily of which your correspondent, p. 420, speaks, is no doubt the beautiful *Lilium sulphureum*. When first introduced to cultivation, I believe it was described as *Lilium Wallichianum superbum*, but it has since been renamed *L. sulphureum* by Mr. Baker. The two Lilies are only so far related to each other that both belong to the "longiflorum" group, but else there is no more difference between them, for instance, as between *L. longiflorum* and *L. Browni*. The bulb in *L. Wallichianum* is narrow-scaled, small, almost conical; the stem green, very slender, about 3 feet in height; the leaves are linear, light green in colour; the flowers, which are few in number, are almost straight-tubed, the tips of the segments recurved. The flower is pure white, often tinged with green, while they are scented like *L. longiflorum*. Owing to the smallness of the bulbs they are difficult to import, as often a whole consignment is dried up in transit. *L. sulphureum* has large bulbs, more like those of *L. speciosum*, the colour being a deep vinous purple. The stem is usually stout, from 3 feet to 8 feet in height, and tinted purple. The leaves are linear, the upper ones often lanceolate, and bearing in the axils of leaves bulbils such as we find only in *L. bulbiferum* and *L. tigrinum*. The trumpet-shaped



FIG. 141.—ADIANTUM CAPILLUS-VENERIS IMBRICATUM (HARDY).

(SEE P. 433.)

Hemsley did not appear to me to be convinced that I had the same variety as he had grown. Since that time I have seen plants from various sources, all of which are of the same variety as mine, and on close inspection I have found them more or less fertile. At that time I sowed spores taken from my plants, and have now some small plants in which you can see the character of the parents, and in the prothallus state they were in the form of small rosettes, which I first thought were a number together, but they never have formed more than one crown. As I have never seen any of the bulbils Mr. Hemsley speaks of, it would be well to get the experience of other growers on that

Messrs. Low, then of Clapton, in 1889, it was named by Mr. Baker as *L. Wallichianum superbum*, an indefinite name for such a grand Lily. Being from a horticultural standpoint so different in bulb, foliage, flowers, and in the production of bulbils in the axils of the leaves, from the typical *L. Wallichianum*, a good deal of discussion took place as to whether it had not been unjustly deprived of specific rank; and next, the suggestion was put forward that it might be the *L. ochroleucum* of Wallich, which is generally referred to under the head of *L. nepalense*. Two or three years after its first introduction, Mr. Baker saw fit to reconsider his previous decision, and named it *L. sulphureum*, thus

flowers are sulphur-coloured, sometimes tinged pink, while the exterior is coloured purple and green, and the scent is strong and rather sweet, quite different to that of *L. Wallichianum*. *L. sulphureum* is much hardier, and more easily managed than *L. Wallichianum* and is a native of Upper Burmah; the other is found in the Himalayas. I flowered both Lilies in the open this year; in fact, while writing I have still a bloom of *L. sulphureum* near me. *G. Reuthe, Ware's Nursery, Feltham.*

"FROSTING" SHRUBS.—Your correspondent, "W. C.," will find the following method satisfactory if carefully followed out. Procure a tub or pail (according to the size of the shrubs or branches to be treated), put in enough whitening and water to make it of the consistency of paint, then add enough liquid-size to make it adhesive—about a pint to a pailful of mixture; well stir it together, and keep it stirred while using. Having the shrubs ready at hand, dip them in the mixture, then let the superfluous stuff run off; having ready a flower-dredger containing "Jack Frost Powder" (which can be purchased at any good fancy shop), and sprinkle the shrubs there with while moist; let the dressing dry gradually, and keep them in a dry place till wanted. Small pieces of the common Corse dressed in this way, and placed in pots or dishes with a groundwork of small Ferns and moss, make a striking contrast to small *Codiaeums* and *Cocos Palms* for the decoration of the dinner-table for the Christmas season. *A. S. Cole, Moncreiff's Gardens, Bridge of Earn, N.B.*

— In answer to the enquiry appearing in the last issue of the *Gard. Chron.*, I give the following method of producing a wintry aspect to shrubs, Christmas-trees, &c. The materials required are flour, powdered glass, and water. The shrubs, &c., should not be of a heavy character, like *Abies Nordmanniana* for example, but light and graceful, like *Hemlock Spruce*, *Cryptomeria elegans*, *Berberis*, &c. Young shoots of Oak saplings still clothed with their yellow leaves, or common Bracken, are excellent for the purpose, as also *Eulalia japonica*, and various grasses, all of which afford lightness. Powdered glass, I think, can be purchased quite cheaply, or it may be easily made by breaking up ordinary window glass on a flat stone or cement floor with an iron rammer. Break it quite fine, and when applied this represents frost, and under artificial light glitters exceedingly, like snow or hoar-frost. Immerse the shrubs in water, shake off what is superfluous, and cover the whole of the branch with flour as white as possible by means of a flour-dredger, and afterwards sprinkle the plant with the powdered glass. The flour and glass should be put on the shrubs when damp. *E. Molyneux.*

SOCIETIES.

NATIONAL ROSE SOCIETY.

Report of the Committee for the Year 1900.

The Committee, in presenting their report, are pleased to record another year of steady progress in all the branches of the society's work.

The cold and dry weather in May and in the early summer, by checking the growth of Rose plants, had an unfavourable influence upon the Salisbury exhibition, which proved the smallest southern show that the society has yet held; but at the exhibition which took place at Westminster, in conjunction with the Royal Horticultural Society, a week later, the competition was much more satisfactory. The Crystal Palace Show proved an unusually extensive one, being the largest metropolitan exhibition, with the exception of those in 1892 and 1897, yet held by the society; but owing to the unfavourable character of the season, the general quality of the blooms was below the usual standard. The display of Roses at the Birmingham exhibition was also exceptionally large.

Great credit is due to the local committees for the excellent arrangements made in connection with the southern and northern exhibitions,

and especially to Mr. G. Nicholson at Salisbury and to Professor Hillhouse and Mr. C. W. K. Wallis at Birmingham. Indeed, seldom have these arrangements been in all respects as complete and satisfactory. Much credit is also due to Mr. G. Caselton for his share in the management of the Crystal Palace Show. At all three exhibitions of the society the attendance of visitors was exceptionally good.

At the conferences held at Salisbury and at Birmingham, interesting discussions took place upon Miss Jekyll's paper entitled "Suggestions for the Decorative Use of some Garden Roses." The report on these conferences has recently been issued to the members, together with a new and revised edition of the *Hints on Planting Roses*. The committee take this opportunity of expressing their best thanks to Miss Jekyll for her admirable and suggestive paper. The committee report with pleasure that the sale of the Society's publications to non-members has greatly exceeded that of any previous year. They likewise regard with satisfaction the result of their efforts to encourage the staging of exhibition blooms in vases instead of boxes, and also in the increased number of stands of garden Roses at all three exhibitions.

It is with the deepest regret that they have to record the death in May last of Mr. T. B. Haywood, for seventeen years the Society's able and much-respected hon. treasurer. They have also to deplore the loss through death of that very generous friend of the Society, Mr. F. W. Campion. Then on the eve of the Birmingham show came the sad news of the death of Mr. Benjamin R. Cant, of Colchester, at all times a warm supporter of the Society, and one of its original founders. A subscription list has already been started to insure a special prize, to be entitled the "Ben Cant Memorial Prize," being offered annually in his memory at one of the Society's exhibitions.

FINANCE.

The committee feel they cannot refer to this question of finance without expressing their keen appreciation of Mr. Charles B. Haywood's kindness in having consented, on the death of his father, to accept the position of hon. treasurer to the society. The usual payment of £105 from the Crystal Palace Company towards the expenses of the metropolitan exhibition has not yet been received, otherwise the financial position of the society would have been in every respect as satisfactory as in former years. In order to prevent the society being placed in a similar unsatisfactory position at any future time, through the loss or delay in payment of any large sum due to it, the committee recommend that a reserve fund be at once set on foot.

There has again been a steady increase in the roll of members, which at the present time number 584, or more than in any preceding year.

PROPOSED ARRANGEMENTS FOR 1901.

The southern show of the society will be held at Richmond, Surrey, on Wednesday, June 26, in conjunction with the Richmond Horticultural Society; the metropolitan exhibition at the Crystal Palace on Saturday, July 6; and the northern show at Ulverston, in connection with the North Lonsdale Rose Society, on Wednesday, July 17. Prizes will also be offered by the society at the Rose Show of the Royal Horticultural Society, which will take place at the Drill Hall, Westminster, on Tuesday, July 2.

MEMBERS' PRIVILEGES.

Members subscribing £1 will, as usual, be entitled to two private views and four transferable tickets, the latter admitting at the same time as the general public; while subscribers of 10s. are entitled to one private view and two transferable tickets. Each of

these tickets is available for any one of the society's exhibitions. Members joining the society for the first time in 1901 will also receive copies of the following publications:—The new edition of the *Official Catalogue of Exhibition and Garden Roses*, the revised edition of the *Hints on Planting Roses*, the *Report of the Conferences on Pruning and Exhibiting Roses*, the *Prize Essay on the Hybridisation of Roses*, the *Report on the Constitution of Rose Soils*, and the conference report on Miss Jekyll's paper on "Suggestions for the Decorative Use of Some Garden Roses." Members alone are allowed to compete at the shows of the society.

The committee express their best thanks to the donors of special prizes at the society's exhibitions, among which may be mentioned the Right Hon. Lord Calthorpe, the Right Hon. Joseph Chamberlain, M.P., Captain Ramsay, Mr. C. J. Grahame, Mr. F. Dennison, and the late Mr. F. W. Campion. Their thanks are also due to those local secretaries who have in any way assisted the society to maintain its present position, and especially to Mr. G. W. Cook, who has again outdistanced all its other local representatives in inducing new members to join the society. Mr. F. W. Wright, a new local secretary, has also done excellent service at Birmingham.

ANNUAL MEETING.

DECEMBER 6.—The annual general meeting of the National Rose Society, which was unusually well attended, was held at the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on the above date, and Mr. C. E. SHEA, Vice-President, occupied the chair.

The report of the committee for the past year recorded steady progress in all branches of the Society's work. Owing to the backward character of the season, the southern exhibition at Salisbury had proved an unusually small one. On the other hand, those at the Crystal Palace and at Birmingham were among the largest the Society has as yet held. The attendance of visitors at all three shows was singularly good. Both at Salisbury and Birmingham interesting discussions had followed the reading of Miss Jekyll's paper on the "Decorative use of some Garden Roses."

Deep regret was expressed at the death of Mr. T. B. Haywood, who for seventeen years had been the Society's able and much-respected treasurer; also at the losses by death of Mr. F. W. Campion and Mr. Benjamin R. Cant.

There had been again a steady increase in the roll of members, which now number 584, or more than in any previous year.

Under "Proposed Arrangements for 1901," it was stated that it had been decided to hold the southern show at Richmond, Surrey, on June 26; the Metropolitan show at the Crystal Palace, on July 6; and the northern show at Ulverston, on July 17.

The financial statement, which was read by the Hon. Treasurer, Mr. Charles B. Haywood, showed a decrease in the balance in hand during the year from £155 1s. 2d. to £14s. In regard to this, Mr. Mawley explained that had the usual payment from the Crystal Palace Company towards the expenses of the metropolitan exhibition been received, and all outstanding expenses paid, there would have been at the present time a balance in the Society's favour of more than £70. After some discussion, it was decided that the question of the metropolitan show in 1901 should be left in the hands of the committee.

Alterations were made in the bye-laws—(1) To enable the committee to fill any vacancy in the officers or committee which might occur during the currency of any year; (2) to prevent the Gold Medals of the Society being offered in future by affiliated societies.

Regulation sizes for all the other exhibition stands having been decided upon in previous years, a similar decision was at this meeting come to in regard to the sizes of stands for trebles.

The invitation from the Devon and Exeter Horticultural Society for the Society to hold its southern exhibition there in 1902 was accepted.

On the motion of Sir A. J. Arbuthnot, Bart., a hearty vote of thanks was accorded the chairman.

Most of the members present at the meeting stayed to the annual dinner, which was presided over by Mr. George Gordon, V.M.H., Vice-President, and a most enjoyable evening was spent. *Edward Mawley.*

ROYAL HORTICULTURAL. Scientific Committee.

DECEMBER 4.—On this occasion there were present C. E. Shea, Esq., in the Chair; and Messrs. Michael, Wilks (Rev.), and Dr. Masters.

Seed-vessels.—Her Grace the Duchess of CLEVELAND sent fruits of the following plants:—*Araujia albens*, fruit consisting of two thick oblong follicles; *Mandevilla suaveolens*, fruit of two long, narrow, slender follicles; *Stauntonia latifolia*, fruit

a long, thick, oblong obtuse berry; *Cercis siliquastrum*, with legumes like those of a Pea, but compressed; *Magnolia Soulangiana*, a long cluster of follicles, bursting, and revealing a seed covered with an orange-red investment.

Weeping Chamaejasme.—"Pioneer."—This was one of eleven seedlings from a cross between *Eva Knowles* and *Viscountess Hambledon*, raised by Mr. ALSTON, Ditton Court, Maidstone. The peculiarity of all eleven plants consisted in the downward geotropic direction of the branches, which were bent downwards like those of a Weeping Ash, but upturned heliotropically at the ends, when flowers are produced. This peculiar habit would render the plant very useful for certain decorative purposes. No cause could be assigned for the drooping tendency.

Double Cyclamen.—Some remarkable flowers were sent by Mr. KER, of Liverpool, on which Dr. MASTERS undertook to report at the next meeting.

Germination of Leucodendron.—Dr. MASTERS showed a drawing of seedlings raised by him, and presenting a curious outgrowth from the caulicle (hypocotyl), similar to that in the Pea, shown on the last occasion.

Fruit Committee.

DECEMBER 11. A meeting of the Fruit Committee was held at Chiswick on the above date to examine Celeries and Potatoes. There were present Messrs. W. Bates (Chairman), W. Poupert, W. Pope, Reynolds, H. Esling, S. Mortimer, G. Kelf, and A. Dean. Only one other member was needed to create a full quorum, but he was not present.

The attention of the Committee was first directed to various stocks of Celery, moulded and blanched, and four of Celery. All the Celeries were in good condition, but the best of the reds were Covent Garden Red, Ivory's Pink, Standard Bearer, and Veitch's Rose, the latter having a peculiarly sweet and pleasant flavour. All possessed very solid leaf-stalks and much crispness, in which respect the varieties Superb White, Bibby's White, and Champion Solid White, were practically alike. Three marks were given to all the above-named, whilst White Plume and one or two others were less valuable. The Celeries had largely failed to produce good bulbs, and were rather too leafy. The Potatoes tasted were of late varieties seen in October, when, not being ripe, it was agreed that they be held over till now, and then be again cooked; all had given good crops. Sir J. Llewelyn is a huge cropper, and had its Award of Merit confirmed. The very best that was cooked was a white round, Dumfries Model, which received three marks unanimously—it was so good. The remaining varieties exhibited were not of table merit, two at the least being very watery and flavourless. The obvious deduction seems to be that no progress is being made in table quality, but that cropping qualities remain good.

HORTICULTURAL MEETING AT GHENT.

DECEMBER 3.—At the meeting held in Ghent on the above date of the *Chambre Syndicale des Horticulteurs Belges*, and of the *Société Royale d'Agriculture et de Botanique*, the following awards were made:—

Certificates of Merit for:—White Celery, silver variety, grown in the open air unprotected, shown by M. E. Van Hoorbeke, of Ledeberg; Begonia "Gloire de Lorraine," from M. A. Dalière; *Cypripedium* "General de Wet" (*Laurenceanum* × *Chantini*), from M. L. P. De Langhe-Vervaeke, of St. Gilles, Brussels (*à l'unanimité*); *Vriesea hieroglyphica* variegata, from M. Louis Mullie, of Saffelaere (*par acclamation*); Begonia "Princess of Denmark," from M. Jules De Cock; *Cymbidium* species from MM. Versypet Frères et Soeurs; Cattleya Mendeli, from M. G. Vincke-Dujardin, of Bruges; *Dendrobium Phalaenopsis albens* (*par acclamation*); seedling *Cypripediums* and Cattleya dubia (*par rapport*), all these from M. G. Vincke-Dujardin; *Cypripedium* Maynardii hybrid, from the Société Horticole "La Lys," of Deynze, who sent also six *Cypripedium* var. *insigne*; and Cattleya Trianae alba, from the Marquis de Wavrin (*par acclamation et avec félicitations du Jury*).

Awards for cut flowers were allotted for:—*Lælio-Cattleya* (*Lælia purpurata* × *C. Warneri*); Cattleya (*Lælia elegans* × *C. Hardyana*), and *Oncidium varicosum* Rogersii, all three from M. G. Vincke-Dujardin. A Flowering Certificate was awarded to the same exhibitor for Cattleya Harrisoniae.

SCOTTISH HORTICULTURAL.

DECEMBER 4.—The usual monthly meeting of this Association was held in Dowell's Rooms, Edinburgh, on the above date, to hear a lecture by Mr. A. D. Richardson, of the Royal Botanic Garden, Edinburgh, on "Forestry as practised in Germany." Mr. D. P. LAIRD presided, and nine new members were added to the Association. The lecturer compared the forestry of this country with that practised on the continent. The superiority of continental systems, the lecturer said, was due to Governmental control of forests, and to their being planted with definite aims, while every operation was carried out under the eye of skilled officials. The chief forests visited consisted chiefly of Scots Fir, common Spruce, and Beech. In the case of all, the mode of culture was similar, though differing somewhat in detail, viz., crowding the trees together when young, so as to get tall, clean stems,

and later on thinning out to enable the boles to put on girth. Scots Fir was described as a most useful tree for planting on the numerous sandy plains. This tree improved the soil, though when circumstances allowed the forest would be under-planted with Hornbeam or Beech. Hornbeam was, perhaps, the most valuable tree to the German forester; without it, the soil would be impoverished, the cultivation of trees demanding light rendered impossible, and a scarcity of a most useful kind of timber tree. One fact was clearly demonstrated by the lecturer, as well as by some of the members who spoke at the close of the lecture—that although silviculture, or the growing of trees together as forests for profit, had reached a higher stage of perfection on the Continent than here, yet in arboriculture, or the growing of isolated trees, this country is far ahead of continental countries.

A series of splendid slides from photographs taken by Mr. Richardson were exhibited on the screen for the first time. These showed various phases of German forestry, as the splitting up of old stumps (an operation that does not pay its cost in saleable firewood, but which is very necessary in order to prevent insects injurious to timber using them as breeding-places); the preparation of the land; charcoal-burning, and others, including numerous views of well-grown forests, and portraits of foresters.

The exhibits in the room included late Chrysanthemums Madame Carnot, from Mr. LAMONT, gr. at Merchiston; a vase filled with good blooms of Chrysanthemums, shown by Mr. TODD, who explained that they were not shown as examples of high feeding, but rather as what could be done at but little cost of money and labour.

A vote of thanks was accorded Mr. Richardson for his admirable lecture.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

DECEMBER 10.—The monthly committee meeting of this Society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday evening last, Mr. E. Burge in the chair.

Eleven new members were elected, making eighty-three for the year. Three pounds was granted to a member from the Convalescent Fund. A member who is over seventy years of age was granted 8s. per week from the Benevolent Fund during sickness. The sum of £2 2s. was granted from the Benevolent Fund to a member who had the misfortune to break his arm, towards paying his doctor's account. The Treasurer reported that he had invested £400 in Cardiff Corporation Stock.

A special meeting will be held on January 14 next, at 8 P.M., for the purpose of increasing the Secretary's salary. W. C.

NATIONAL CHRYSANTHEMUM SOCIETY.

DECEMBER 10.—It is usual for the Classification Committee of the Society to meet after the autumn exhibitions, in order to classify any new varieties which may have put in appearance during the year, or varieties of older date which, after a year's culture have developed an improved character. As a matter of course, it is the incurred section which makes the greatest demand upon the attention of the committee, for they increase almost by leaps and bounds. The committee met on the above date, the chairman, Mr. J. W. Moorman, presiding, and the following were included in the list of incurred varieties which may be shown in the classes in which this type is exhibited; the committee at the same time is careful to express no opinion as to the distinctness or otherwise of some of the varieties. The list of those added is as follows:—Annie C. Love, Comtesse d'Etoile, Creole, Emile Nonin, Frank Hammond, Fred. Palmer, Fouka, Golden Madame Ferlat, Henry Ellis, J. Pearce, J. W. Wilkinson, John Carvel, L. M. de la Drome, Lydia, May Bell, Madame J. Steele, Madame Mante, Madame Verneuil, Mervyn Penford, Miss F. Southam, Miss Nellie Southam, Mr. E. Bennett, Mr. A. E. Stubbs, Mr. F. King, and Stephen Gommand Watteau. The practice of prefixing Mr. to so many of the new varieties is clearly open to objection on the ground that it is not necessary. After repeated trials, and further on the evidence of cultivators, the committee came to the conclusion that Duchess of Fife and Mrs. Airdrie, C. H. Curtis and Major Bonafon, hitherto classed as too much alike, should be considered as distinct, and they were accordingly deleted from the too-much-alike list. A similar course was also adopted in the case of Australia and Mr. T. Carrington, they can now be shown on the same board as distinct. Lewisham Belle, recently exhibited by Mr. H. J. Jones, was classified as a true reflexed.

THE SMITHFIELD CLUB.

DECEMBER 10 to 14.—Once again the Christmas season has been preceded by a display of fat beasts, shown under the auspices of the Smithfield Club during the present week at the Agricultural Hall, Islington.

It may afford some horticulturists, who have experienced disappointment at competitive exhibitions, where the judges' estimation of their produce has not been identical with their own, a certain amount of consolation to know that even in respect to the merits of a fat beast there is shown considerable room for difference of opinion. The judges at the Birmingham show held one opinion; those at Islington another. The Queen's splendid Shorthorn heifer "Cicely," that won "hands down," as it were, at Birmingham, was neither Champion of the Show nor even Champion heifer at Smith-

field. The Champion Heifer proved to be Mr. LEVINGS' "Ladysmith," and the premier beast of the show, Mr. WOODLEY'S "Lord Roberts." For our own part, this was only an incident in the show, and we were not particularly desirous to know that the judge at Smithfield was a Herefordshire man, and the beast, "Lord Roberts," a member of the breed bearing the name of the same county. But these were probably facts, nevertheless.

Much more interesting to a representative of the *Gardener's Chronicle* were the displays of roots and seeds shown by the leading firms, and put up in the shape of imposing stands in the galleries of the hall. Of these, the most attractive stand was one from the firm of Messrs. SUTTON & SONS, Reading. The centre was a mass of heavy roots of the famous Mangold Prize-winner, and a single root of this was shown which weighed 55 lb. A crop of this variety was once reported in the field to weigh 105 tons to the statute acre. Mammoth, Long Red, Golden Tankard, Crimson Tankard, Oxheart, &c., were other good varieties shown. A new yellow-fleshed Turnip, named Centenary was exceedingly interesting, having a russety-like skin which in appearance suggests that of a Melon. It is also a large and solid root, and has given a crop of 12 tons 4 cwt. 2 qrs. to the acre. Other good but older varieties were Favourite, Perfection, Early Sheepfold, a very quick-growing, green-top yellow Turnip; Imperial Green Globe, Purple-top Mammoth, &c. Of Swedes, the variety Magnum Bonum is considered best, and was represented by mammoth roots. Other varieties were Crimson King and Champion. Excellent tubers of Potatoes were shown of such varieties as Reliance, Ideal, Windsor Castle, Magnum Bonum, Abundance, &c.

Messrs. J. CARTER & CO., High Holborn, London, had a fine stand in which their Gold Tankard, Long Red, Intermediate, Windsor, Mammoth, and Goldfinder Mangolds; Elephant and Kangaroo Swedes, and first-class varieties of Turnips, &c., were conspicuously displayed. There were also Potatoes, Onions, Scarlet Perfection Carrots, Parsnips, Beans, Peas, and seeds of varieties of grain. The Landscape prize offered by the Queen for the best instance of farming in the county of Bucks, and won by JOHN KINROSS, Esq., Riding Court, Datchet, was exhibited on this stand, and had a considerable effect.

Another large firm represented was that of Messrs. E. WEBB & SON, Wordsley, Stourbridge. Their stand, like the others, was laden with very heavy roots. Prominence was given to Smithfield Yellow Globe Mangold, a new variety of much value; and Lion Intermediate, said to produce more than 80 tons per acre. Imperial Swede, as well as the variety Giant King, was represented by first-class roots. The Kinver Chevalier Barley is a favourite variety, and White Tartar Oat, and other grains, as Wheat, &c., were finely shown, besides a quantity of Potatoes, &c.

Messrs. DICKSONS, Ltd., Chester, contented themselves with displaying a few dishes of good fruits of popular varieties of Apples, and samples of grass and Clover seeds.

THE SURREY SEED COMPANY, Redhill, had a stand of roots and produce, more especially interesting to market gardeners, as Onions, Carrots, Potatoes, Tomatoes, Parsnips, Marrows, Turnips, and seeds of Peas, Beans, Radish, Onion, &c.

Messrs. HARRISON & SON, Leicester, made prominent exhibits of "Nailstone" Swedes, "Normanton Globe" Mangold, "Red Globe" and Green Barrel Turnips, &c. They had excellent Potatoes, Carrots, Onions, Turnips, Leeks, and seeds of Peas and Beans in considerable variety.

Messrs. W. HORNE & SONS, Perry Hill, Cliffe, Rochester, showed excellent Apples, including the new variety Charles Ross, and a number of other popular sorts.

Messrs. GARRON, Ltd., Warrington, showed dried specimens of new varieties of the various grains, and fresh samples of their Model and Monarch Swedes, Yellow Globe Mangold, Pioneer Oat, Brawlers' Favourite Barley, &c.

Mr. JOHN K. KING, Coggeshall and Reading, had Champion Orange Mangold, described as from a field crop of 70 tons to the acre; and Essex Prize-winner Mangold (60 tons to the acre). His leading Swede is John Bull, which ought to meet with popularity at home, if less successful on the continent. White Globe and Imperial Green Globe Turnips were shown well, and there were Carrots, Onions, Parsnips, and various varieties of seeds.

Potatoes were shown by Messrs. FIDLER & SONS, Reading; and Mr. A. FINDLAY, Markinch, N.B. The Reading firm had a large quantity of fine tubers, prominent amongst the varieties being New Maincrop, Chas. Fidler, and Fidler's Fame. The Scotch firm had a collection of thirteen varieties, which were represented by tubers selected for seed. Some of the newest were Hibernian, Mr. Ambrose, Colonel, Scotia, and Empire.

Messrs. W. & J. BROWN, Stamford, and Peterborough, showed some fine Apples. A specimen of Bismarck, 16 oz. in weight; Allington Pippin, Barnack Beauty, Peasgood's Non-such, and a number of other varieties. Upon this exhibit was a growth of *Lygodium scandens*, 15 feet in length.

Mr. E. W. KING, Coggeshall, exhibited roots; Mr. A. BLATCHFORD, Coventry, roots Cabbages, Peas, &c.

Cider was exhibited by Mr. JNO. WATKINS, Withington Farm, Hereford, and Messrs. GAYMER & SON, Attleborough, Norfolk. The cider manufacturers should make the best use possible of the "arsenic" scare; now is their opportunity!

Other collections of produce included one from the Queensland Government, and one from the Canadian Government. From Canada there was a large Squash exhibited which weighed 322 lb.

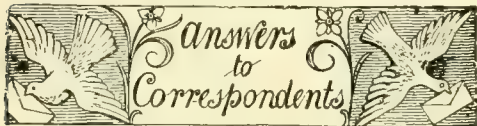
A large variety of new agricultural machinery was exhibited, which would have well repaid attention from horticulturists also; and among specifics for a variety of purposes, were some chemical manures, shown by Mr. COLCHESTER, Ipswich.

Obituary.

JOHN MCINTYRE—We, and doubtless many of our readers will, learn with regret of the death of Mr. J. McIntyre, gardener for a period of twenty years to Mrs. Gurney Pease, at Woodside, Darlington. Mr. McIntyre, who had been ill with pneumonia for one month, died at his residence in Darlington on November 27. He was well known in the North of England as an exhibitor of fruit, &c., frequenting the shows held at York, Manchester, Newcastle-on-Tyne, Edinburgh, &c., and being generally very successful. As a judge his services were often in requisition. Before going to Woodside the deceased had held several important situations in Scotland as head gardener. Some few years ago he wrote calendarial articles for this journal, which found much appreciation from our readers, but of late he had communicated but little to our pages. His death will be a considerable loss to the Darlington Horticultural Society, of which he was a prominent member.

ENQUIRY.

AN advertiser in a daily paper announces Bermuda Buttercups, Giant Crocus, Blue Snowdrops, "rare and very lovely," and other "exquisite curiosities." Can any reader furnish information concerning these rarities?



ACALYPHA LOSING ITS LEAVES AND FLOWERS: *G. C., Addlestone.* Due to fumes of gas, or the coldness of the room, either of which would soon ruin the plant. We assume that the plant was properly supplied with water.

BLACK CURRANT: *K. S.* The shoots are perforated by some boring insect. We cannot find the creature, but should not be surprised if it turned out to be the caterpillar of the leopard-moth. You cannot do better than you have done.

BOOKS: *A. Willmot.* *Villa Gardening, a Handbook for Amateur and Practical Gardeners.* By Edward Hobday. (Macmillan & Co., London.) Price probably about 3s. 6d.—*Edwin Graves.* *Dictionnaire Iconographique des Orchids.* The work is issued in parts at irregular intervals. The price of subscription is about 20s. yearly. You should enquire of M. Goossens, Avenue Walkiers, 58, Auderghem, Brussels, concerning the other matters mentioned in your note.

CELERY SPOILED: *A Subscriber.* The centres of the plants being in a rotten condition at this date, seems to us to point to a too hurried earthing-up having been practised, thus burying the leaves in the hearts of the plants, and these, being deprived of light and air, have decayed.

CHRYSANTHEMUM: *A Weekly Subscriber.* Pronounced as written, with the accent on *an*.

FOREMAN: NOTICE TO QUIT SERVICE: *W. H.* It is more in accordance with custom for a garden-foreman, for whom doubtless the employer pays servant's tax as a "domestic," to receive and give a month's notice. Answers to advertisements can be addressed to advertisers by arrangements made with the publisher of this journal. The *Gardeners' Chronicle* has a certain circulation in the Cape Colony, Natal, &c., but we scarcely think that the immediate future favourable for obtaining a gardener's or "grower's" situation in any of them. Better wait a year or two here.

FRUIT: *G. L. W.* *Pyrus japonica*—makes excellent jam. Your fruit is of average size.

FUNGUS ON WISTARIA: *H. T.* The Oyster Mushroom, *Agaricus (Pleurotus) ostreatus*, in a young state. Often eaten on the Continent. *M. C. C.*

GRAPES COLMAR GRAPES NOT COLOURING: *Colmar.* We imagine from the sample sent that the Vines have been shaded for too long a period of time, have received too much water whilst growing, and been very heavily cropped perhaps for two

years, for we find neither sweetness nor colour in the fruit. We can scarcely believe that Grapes growing in a vinery with a southern aspect, and unshaded, which were started on March 1, would be so immature, especially with such weather as prevailed last autumn. Any of the manures mentioned would be suitable if used in moderation. Manure may be afforded when the Vines are in full growth, and before the seeds form. Nothing is gained by affording manure after the fruit is of full size, consequently it should not be applied in the colouring season, as it might tend to the cracking of the berries, a malady which appears to have affected some of the bunches; and it certainly would prolong the season of growth, more especially if accompanied by copious applications of water, and a heavy rainfall; and it would make perfect ripening of the current season's wood and fruit imperfect. It is immaterial how many rods are taken from a root, provided the border space occupied by each Vine is proportionate to the area covered by the rods; and a Vine with two rods ought to bear, all things being equal, as great a weight of fruit as two distinct Vines of one rod each. There are healthy Vines in existence that carry annually several cwt. of well-coloured good Grapes. The bunches should be thinned whilst they are in flower, not allowing a number of bunches to set fruits and then thin them, which is a waste of the energy of the Vine.

HYBRIDISATION AND CROSS-BREEDING: *Colonist.* Dr. Focke's standard book is in German, and is a descriptive list of hybrids. You do not say what your requirements are, but we fancy the book just mentioned is not quite what you want. The *Report of the Hybridisation Conference*, published by the Royal Horticultural Society, is the most recent general work on the subject. Burbidge's *Cultivated Plants*, an excellent book, has a chapter on hybridising, and all the text-books deal more or less fully with the subject.

INSECTS: *Rus in Urbe.* Centipedes (Julus), devourers, chiefly, of decaying vegetable matter, or the wounded and shinned parts of roots. Not injurious in well-tilled land, but their presence in great numbers is indicative of a soured condition of the soil, and of the need of deep tillage and thorough aeration.—*S. P.* Grubs of the cockchafer, very injurious. Turn up the soil, and encourage rooks and starlings; or let the poultry and pigs have access to the borders for a short time.

LOST TESTIMONIALS: *A Wronged One.* You should not have parted with the originals, but have sent copies of them. You had better consult a solicitor.

MISLETO: *Ignoramus.* Common on the Apple, Common Poplar, but not the Lombardy; Crataegus, and Maple, and seldom on the Oak. It is not correct to say that it grows more or less freely on every hardwood tree except the Oak. The seeds are usually deposited in crevices of the bark by birds, who, in trying to get the seed from off their bills, rub it against the bark. There is no one position that the seeds so left would take on a branch, but they may be carried from the upper to the lower side of a branch by the rain, and that side being always the moister one, vegetation is favoured to that extent. The roots spread at the first in and between bark and wood, and as time goes on they enter the woody tissues, each remaining separate, and draw nutriment from the host-plant all the while, and eventually destroy the branch on which it grows. The seed, if placed by man on a branch, should have the embryo directed towards the trunk of the tree, and it should not be crushed. Mistleto, *Viscum album* belongs to the leafy series, which consists of species inhabiting Europe, Southern Asia, and Southern Africa.

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can consistently with our editorial work, but as the naming entails much labour and considerable cost we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay is often unavoidable.—*G. E. E.* 1, Rotten and smashed; 2, Rousseline; 3, Emerald; 4, Beurré Hamecker; 5, Belle

Rouennaise; 6, Red Doyenné.—*W. J. S. B.* You have greatly exceeded the number of fruits allowed by our rules, some are named this week, and the remainder will be dealt with in another issue. 1, Comte de Flandre; 2, Siely's Mignonne; 3, rotten; 4, Bergamotte Esperen; 5, Jalousie de Fontenay.—*W. C., Battle.* 1, Beurré Robert; 2, Belle du Figuier; 3, Belle de Thouras; 4, Belle de Féron.—*H.* Beurré Berckmans.—*C. A. B.* Harvey's Pippin.—*H. P. N.* Kentish Fullbasket. *O. L.* 1, Gooseberry Apple; 2, Hunthouse; 3, Graham; 4, Smart's Prince Arthur; 5, Flushing Spitzenburgh; 6, Golden Ducat.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*Shrub.* *Ligustrum lucidum.*—*Calla.* 1, *Lastrea lepidota*; 2, *Pteris longifolia*; 3 and 4, varieties of *Adiantum cuneatum*; 5, *Gymnogramma peruviana argyrophylla*; the spathe of the *Arum* is three-lobed, probably from some injury to the spathe when very young.—*W. H.* 1, *Lælia anceps*; 2, *Oncidium pulvinatum*; 3, *Zygopetalum Mackayi*; 4, *Blechnum polypodioides*.—*A. Y.* *Angræcum eburneum* and *Lælia rubescens*, generally called *Lælia peduncularis* in gardens.—*L. F.* *Cypripedium* × *Leea-num*.—*C. G.* *Ligustrum lucidum*, and pod of *Medicago*, probably *M. cupulina*, the Lucerne.—*J. K.* You must send better specimen.—*Old Subscriber.* *Asclepias curassavica*.—*J. E. H.* 1, *Pteris aquilina*; 2, *Cyrtomium falcatum*; 3, *Pteris tremula*; 4, *Asplenium bulbiferum*; 5, *Adiantum tenerum*; 6, *Adiantum cuneatum*.—*G. S.* We cannot name varieties of florists' flowers.—*J. M.* 1, *Codiaeum Queen Victoria*; 2, *C. interruptum elegans*; 3, *C. Andreanum*; 4, *C. latifolium maculatum*; 5, *C. Morti*; 6, *C. Laingi*, alias "Heathi elegans"; 7, *C. Rodeckianum*; 8, *Aralia quinquefolia*.

PROFITS ON FRUIT FARMING: *W. Monro.* The figure quoted, viz., £700 per acre, is absurdly high. Cherries will sometimes make about £40; mixed plantations of bush fruits, and Apples and Pears bring in from £25 to £40 per acre; Gooseberries £18; Black Currants sometimes fetch 25s. per bushel; and 600 to 800 bushels per acre, but usually the market price is not more than 8s. per bushel. Strawberries have been known to make £150 per acre. The yield of Apples averages £20 per acre for good varieties carefully packed and sorted; Pears fetch, as a rule, rather more than Apples; Plums have been known to fetch £100 per acre, but usually it is much less. Damsons pay better than Plums because they are more certain bearers.

TRAY AND PLATE: *E. R. B.* It was a matter to which the attention of the Secretary should have been drawn before the awards were made. The judges may have thought it immaterial whether the fruit was shown on trays, as stated in the Society's schedule, or on plates. If the better fruits were shown on plates, and not on trays, we do not suppose that any reasonable judges would have given the prizes to the latter.

VIOLET SHOW: *G. B.* We know of no special show of Violets being held anywhere in this country. The National Viola Society—Secretary, Mr. Dougall, 52, Pembroke Road, Walthamstow—may include Violets in their schedule.

COMMUNICATIONS RECEIVED.—*P. B.* Société Nationale d'Horticulture, Paris.—*S. W. F.*—*E. B.*, Berlin.—*F. C. S.*—*Dr. Goetze*, Griefswald.—*The Royal Institution*—*Louis Gentil*, Congo.—*F. D.*, Saharunpore.—*M. Van den Bosche*, Tirimont, Belgium.—*S. W. F.*—*W. G. S.*—*D. S. F.*—*Sir G. B.*—*W. S.*—*Chad.*—*A. D.*—*J. Mayne.*—*R. P.*—*E. S.*, Manchester.—*R. D.*—*H. C.*—*J. E. J.*—*Expert.*—*E. M. C.*—*C. H.*—*E. B.*—*J. O'B.*—*C. T. D.*—*A. D.*—*R. W. Starr*, Nova Scotia.—*J. Ettle.*—*A. P.*—*T. F.*—*J. W. J.*—*G. G. S.*—*W. C.* (answered above)—*Herd Bros.*—*H. F. McMillan*—*J. A. F.*—*B. P.*—*A. W. B.*—*G. B.* (we will make enquiries).—*H. A. B.*—*A. L.*—*E. C.*—*E. M.*

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—*D. S. F.*

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENER, and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Markets and Weather, see p. ix.)

(Brought forward from p. 448.)



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period December 2 to December 8, 1900. Height above sea-level 24 feet.

1900.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			
		At 9 A.M.		DAY.		At 1-foot deep.		At 2-feet deep.	
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.	LOWEST TEMPERATURE ON GRASS.
		Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.
SUN. 2	E.N.E.	41°	40°	34°	30°	44°	47°	24°	9° 37° 8
MON. 3	E.S.E.	42°	40°	45°	40°	43°	45°	47°	19° 7° 37° 6
TUES. 4	W.S.W.	52°	49°	54°	42°	40°	44°	47°	14° 9° 71° 2
WED. 5	S.S.W.	50°	49°	56°	49°	50°	44°	47°	7° 49° 5° 46° 2
THU. 6	W.S.W.	49°	46°	52°	48°	50°	48°	48°	2° 48° 5° 41° 8
FRI. 7	W.S.W.	43°	41°	51°	41°	47°	48°	49°	7° 20° 9
SAT. 8	S.S.W.	51°	49°	53°	43°	45°	48°	49°	8° 26° 3
MEANS...	...	47°	45°	52°	42°	47°	46°	47°	7° 8° 37° 3

Remarks.—The weather during the past week has been very dull, mild, and wet. The mean maximum and minimum for the corresponding week in 1899 was 46° 3 and 36° 2 respectively, and the rainfall for the same period 0·33 inches.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending December 8, is furnished from the Meteorological Office:—

"The weather during this period was extremely dull generally, and considerable falls of rain of almost daily occurrence.

"The temperature was above the mean in all districts, the excess ranging from 1° in Scotland, N., and 2° in Scotland, E., to 6° in most of the English districts, and to as much as 7° in the Midland Counties. The highest of the maxima were registered, as a rule, on the 8th, and varied from 60° in England, N.W., to 58° or 57° in most other parts of the Kingdom, and to 55° in Scotland, W. The lowest of the minima were experienced during the earlier half of the week, when they ranged from 25° in Scotland, E., and 26° in Scotland, N., to 35° in England, E., and N.W., and to 37° in England, N.E., and the Channel Islands.

"The rainfall was more than the mean; over the western and southern parts of Great Britain, and in Scotland, E., the fall was about twice as great as the normal.

"The bright sunshine was unusually deficient, the percentage of the possible duration ranging from 9 in Scotland, N. and E., and 8 in the Channel Islands, to 2 in the Midland Counties."

MARKETS.

COVENT GARDEN, DECEMBER 13.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	Ferns, small, per 100	s. d. s. d.
Adiantum, p. doz.	5 0-7 0	
Azore-vite, var. doz.	6 0-36 0	
Antirrhinum, p. doz.	18 0-36 0	
— specimen, each	5 0-10 6	
Cactus, per dozen	18 0—	
Cyclamen, per doz.	18 0-30 0	
Cyclamen, per doz.	8 0-10 0	
Dracæna, var., per dozen	12 0-30 0	
— var. dis., per doz.	9 0-18 0	
Erica, var., per doz.	12 0-36 0	
Euphyasia, var., per dozen	6 0-18 0	
Evergreen, var., per dozen	4 0-18 0	
Ferns, in variety, per dozen	4 0-18 0	

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus "Fern," bunch ...	1 0-2 0
Carnations, per doz. blooms ...	1 0-2 0
Cattleyas, per dozen	9 0-12 0
Eucharis, per dozen	2 0-4 0
Gardenias, per doz.	1 6-2 6
Lilium Harrisii, per dozen blooms ...	4 0-6 0
Lilium lancifolium album, per dozen blooms ...	1 6-3 0
Lilium rubrum, per dozen	3 0-5 0
Lilium longifolium, per dozen	4 0-6 0
Lily of Valley, per doz. bunches ...	6 0-12 0
Maldenhair Fern, per doz. bunches	4 0-8 0
Marguerites, p. doz. bunches ...	2 0-4 0
Mignonette, per doz. bunches ...	4 0-6 0
Odonoglossum, per dozen	6 0-9 0
Roses, Tea, white, per dozen	1 0-3 0
— Safrano, per dozen	1 0-2 0
— Catherine Mermet, per dozen	3 0-6 0
Smilax, per bunch	3 0-5 0
Taberoses, per doz. blooms...	0 3-0 6

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, English, per bushel	3 0-4 0
— B., per lb.	1 9-2 0
— Almeira, brl.	16 0-25 0
Lemons, case	8 6-15 0
Lyches, new, pkt.	1 0—
Oranges, Tenerife, case	2 6-4 0
— Murcia, case	7 6—
— Tangierine, box	0 9-1 2
— 200	6 6—
— Jaffa, case	8 6—
Pears, home grown in sieves	3 0-4 0
— stewing, crates	4 6—
— Californian, half case, and Glout	20 0—
— Californian, whole case, and Glout	20 0—
— Easter Beurre	20 0—
— French, Glout	4 6—
— Russian, crates	4 6—
Persimmons or Kaki, per doz.	2 0-3 6
Pines, each	1 6-3 6
Sapucaia nuts, lb.	1 3—
Strawberries, lb.	1 6-2 6
Walnuts, per bag	7 0—
— 34 lb.	7 0—
— in bags, large	16 0—

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz.	3 0-4 0
— Jerusalem, sieve	1 0-1 6
— Stachys, or Chinese, per lb.	0 6—
Beans, dwf. Madeira, per bkt.	3 0-3 6
— Ch. Islds. and home, dwf., new, per lb.	1 3—
— Beetroot, bushel	1 2-1 6
Beet, per dozen	0 6—
Brussels Sprouts, per sieve	0 6-1 3
Cabbage, tally	1 0-2 0
— dozen	0 6—
Carrots, 12 bunches	1 6-2 0
— washed, in cwt. bags	2 0-2 6
— new bunch	0 6—
Cauliflowers, per doz.	1 6-2 6
— tally	6 0-9 0
Celeriac, per dozen	1 6—
Celery, doz. bndls.	12 0-14 0
— unwashed, doz.	9 0-10 0
Chicory, per lb.	0 3—
Cress, doz. punnets	1 6—
Cucumbers, doz.	8 0-15 0
Endive, new French, per dozen	1 0-1 3
— English, score	1 0—
Garlic, new, lb.	0 3—
Horseradish, English, bundle	1 6-2 0
— foreign, n. bdl.	0 9-1 0
— loose, per doz.	1 9—
Leeks, per dozen bunches	1 6—
Lettuce, French	1 10—
Cabbage, doz.	1 10—
Mint, per doz.	6 0—
Mushrooms, new, per lb.	0 8-9 10
Onions, picklers, per sieve	8 0—
— per bag	3 0-4 0
— cases	6 0-7 0
— English, p. cwt.	4 0-4 6
— bag	1 0-1 6
Parsley, 12 bunches	1 0-1 6
— per sieve	0 6-0 9
Parsnips, in cwt. bags	2 6—
Potatoes, per ton	80 0-130 0
Radishes, per 12 bunches	1 0—
Rhubarb, Yorks, doz.	2 0—
— small, punnets, per dozen	1 3—
Savoy, per doz.	0 6-1 0
— per tally	2 0-4 9
Shallots, new, p. lb.	0 2-0 3
Spinach, persieve	0 6-0 9
— bushel	1 0-2 0
Tomatoes, English, new, per 12 lb.	4 6-5 0
— Canary deeps	2 6-3 6
Turnips, per dozen	1 6-2 0
— in bags	1 6-2 6
Watercress, p. doz. bunches	0 4-0 6

REMARKS.—Apples are better trade, prices having improved. Cucumbers are also advanced in price. Some "Grape Fruits" in barrels are on sale, at 40s.; in cases, at 22s. Mistletoe in crates of about 1 cwt., from Normandy and Brittany, fetch 11s. per crate; it is well berried; and there are also on sale Avocado (Alligator) Pears and Mangos.

POTATOS.

Various sorts, 80s. to 100s. per ton; foreign bags, 50 kilo., 3s. to 4s. 6d.; Dunbars, 125s. to 130s. John Bath, 32 & 34, Wellington Street, Covent Garden.

FRUIT AND VEGETABLES.

GLASGOW: December 12.—The following are the averages of the prices recorded since our last report:—Apples, Canadian Kings, 20s. to 26s. per barrel; Baldwins, Spies, Greenings, &c., 14s. to 18s. doz.; United States, various sorts, 12s. to 17s.; Maine and Boston Baldwins, Ben Davies, Spies, &c., 10s. to 13s. doz.; Pears, Glout Moreau, 37s., 40s., 48s., 48s. 6d. to 6s. per case; Easter Beurre, 4s. to 5s. 1d. per case; Bon Cœur, three layers, 4s. to 7s. per crate; Grapes, English, new, 1s. to 2s. per lb.; Almeira, sound fruit, 14s. to 22s. per barrel; do., showing slight waste, 11s. to 12s. doz.; wasty, 2s. 6d. doz.; Lemons, Messina, 30s., 10s. to 11s. per box; 30s., 8s. 6d.; finest other qualities, 5s. 6d. to 7s. 6d. doz.; Oranges, Midaga, various counts, 6s. 6d. to 8s. per box;

Valencia, ordinary 420's, 9s. to 11s. doz.; large 420's, 10s. to 13s. doz.; extra large 420's, 13s. to 15s. doz.; large and extra large 714's, 12s. to 13s. per case: these prices all for same fruit; Bananas, extra, 10s. to 12s. per bunch; No. 1, 9s. to 10s. doz.; No. 2, 6s. to 8s. doz.; Mushrooms, 6d. to 1s. 9d. per lb.; Tomatoes, Canary deeps, finest, 5s. to 5s. 6d. per box; others, 3s. to 4s. doz.; Onions, Valencia, 5s., 6s., 3d. to 7s. per case; 4s., 5s., 6d. to 6s. doz.

LIVERPOOL: December 13.—**Wholesale Vegetable Market.** Potatoes, per cwt.: Lynn Gray, 3s. to 3s. 4d.; Bruce, 3s. 3d. to 3s. 9d.; Up-to-Date, 3s. 2d. to 3s. 6d.; Main Crop, 3s. 6d. to 4s. 3d.; Turnips, 6d. to 8d. per dozen bunches; Swedes, 1s. 2d. to 1s. 4d. per cwt.; Carrots, 6d. to 8d. per dozen bunches, and 2s. 3d. to 3s. 3d. per cwt. St. John's: Potatoes, 1s. to 1s. 2d. per peck; Grapes, English, 1s. to 3s. 6d. per lb.; do., foreign, 4d. to 6d. doz.; Pines, English, 5s. to 6s. each; Apples, 2d. to 4d. per lb.; Pears, 3d. to 4d. doz.; Tomatoes, 6d. doz.; Asparagus, 1s. per bundle; Cucumbers, 8d. each; Mushrooms, 1s. 4d. per lb. Birkenhead: Potatoes, 1s. to 1s. 2d. per peck; Apricots, 10d. per dozen; Grapes, 1s. 6d. to 3s. 6d. per lb.; do., foreign, 4d. to 8d. doz.; Mushrooms, 1s. to 1s. 6d. doz.; Filberts, 4d. to 6d. per lb.

SEEDS.

LONDON: December 12.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., state, that in consequence of the Cattle Show, the seed market has this week been well attended, nevertheless business, as is usual at this time of the year, has been on a very limited scale, and as regards grass and Clover seeds, no noteworthy change can be quoted in values. Rye and Tares meet with but little attention. The supplies of both Mustard and Rapeseed continue in moderate compass, and full prices for same are consequently asked by holders. Bird seeds, although just now in restricted demand, remain fully as dear, whilst Peas and Haricots move off slowly on former terms. Good samples of Longpod, Scarlet Runner, and Canadian Wonder Beans are now obtainable at attractive figures. The Board of Trade Returns give the imports of Clover and grass-seeds into the United Kingdom during November this year as 31,357 cwt., value £9,004, as against 47,115 cwt., value £31,445, for the same month of 1899.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending December 8, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.	1900.	Difference.
s. d.	s. d.	s. d.	s. d.
Wheat	25 7	26 10	+ 1 3
Barley	25 10	25 11	+ 0 1
Oats	16 5	17 4	+ 0 11

GARDENING APPOINTMENTS.

MR. H. GRIMSON, Foreman in the Gardens of H. V. WARREN, Esq., High Grove, Pinner, as Head Gardener to Sir Ed. Sassoon, Shorncliffe Lodge, Sandgate.

MR. B. GODFREY, for fifteen years Gardener to T. W. STUBBS, Esq., Quar Wood, Stow-on-the-Wold, as Gardener to G. CARRINGTON, Esq., Missenden Abbey, Great Missenden, Bucks.

MR. J. WILDING, for the past three years Head Gardener to F. ELKINGTON, Esq., Lion Hill, Kidderminster, as Head Gardener to J. E. WELBY, Esq., Allington Hall, Grantham.

MR. W. E. AXFORD, for the past four years Head Gardener to W. C. N. CHAPMAN, Esq., Heppington, Canterbury, and formerly Foreman in the gardens at Nash Court, Faversham, as Head Gardener to the Earl of SHAFFESBURY, St. Giles, Salisbury.

MR. J. REISS, as Head Gardener and Bailiff to Mr. EDWARDS, Beech Hill Park, Waltham Abbey, succeeding Mr. REDDING, who has retired after a service of thirty-two years.

MR. ALEXANDER D. ADAM, for nearly three years as Head Gardener to E. LAMBARDE, Esq., Bradbourne Hall, Sevenoaks, as Head Gardener to Lord AMHERST, Montreal Park, Sevenoaks.

MR. F. KNELLER, for the past four years Gardener to Sir E. G. LODER, Bart., Leonardlee, Horsham, as Head Gardener to E. STEINKOFF, Esq., Lydhurst, Haywards Heath, Sussex.

MR. H. PASKETT, late of the Park Road Nurseries, Winchester, as Gardener to Sir E. G. LODER, Bart., Leonardlee, Horsham.

CATALOGUES RECEIVED.

ERNST BENARY, Erfurt, Germany.—Trade Catalogue of Seeds. W. FELL & Co., Hexham, Northumberland.—Trees and Shrubs, Roses, Fruit Trees, Greenhouse Plants, &c.

CHARLES SHARPE & Co., Ltd., Sleaford, Lincolnshire.—Seeds of new Peas, Potatoes, Onions, and other Vegetables. VILMORIN, ANDRIEU ET CIE, 4, Quai de la Mégisserie, Paris.—Seeds of Trees and Shrubs, and Plants for Hot and Temperate-houses.

H. CANNELL & Sons, Swanley, Kent—Seeds, &c. SUTTON & Sons, Reading—Seeds, &c.

FRED. ROEMER, Quedlinburg, Germany—Wholesale List of seeds.

SPECIAL NOTICE TO ADVERTISERS.

Owing to the large increase in the circulation, the hour of going to Press has been altered, and in future all Copy for Advertisements must be received by 5 P.M., on WEDNESDAY at THE LATEST.

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OF

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WANTED, GENTLEMAN with £50.—Half share in Mushroom Business. Or YOUNG GARDENER would prove this an excellent opportunity. Good profits. Indoor crops ready. Commence cutting about ten days.—A. B., Box 18, 41, Wellington Street, Strand.

To Gardeners.

THE MAGISTRATES and COUNCIL of the CITY OF EDINBURGH invite applications for the situation of HEAD GARDENER to take charge of the whole Public Parks and Gardens of the City. Applicants must not exceed the age of 45 years last birthday. Salary £250, rising in two years to £280 per annum. Applications with copies of testimonials must be lodged with the subscriber not later than Tuesday, 18th inst.

THOMAS HUNTER, W. S., Town Clerk,
City Chambers, December 4, 1900.

WANTED, a HEAD GARDENER, who will take entire responsibility and expense of a garden, making arrangements for supply of Vegetables to house. Good Kitchen Garden, about 2½ acres, near town where there is a ready market for produce.—Address X. B., care of Leathwait & Simmons, 5, Birch Lane, London, E.C.

WANTED, HEAD GARDENER, where eight are kept.—Thoroughly experienced, Inside and Out, and expert at House and Table Decoration. No young children. Furnished Cottage and Coals.—Apply, stating references, age, and wages required to RICHARD SCRIVEN, 4, Dergate, Northampton.

WANTED, WORKING HEAD GARDENER.—Married; Kitchen and Flower Garden. Small Greenhouse, Cottage given, State reference, experience, age, family (if any), wages required.—H. BARNETT, Northchurch House, Berkhamsted, Herts.

WANTED, good, practical SINGLE-HANDED GARDENER, to attend Cow and few Poultry.—Apply, with particulars and wages required, R., Box 17, 41, Wellington Street, Strand, W.C.

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WANTED, SECOND GARDENER, Inside and Out; strong, active man, married; Wife to attend Governess. £1 per week, good cottage; extra pay for Governess.—F. BISHOP, Aston Hall, Sheffield.

WANTED, as SECOND, thoroughly good MAN, for Inside and Out. Wages 21s., with 2s. Sunday duty, no bothy.—J. BAYLISS, The Gardens, Lynwood, Sunninghill, Ascot, Berks.

WANTED, YOUNG MAN as GARDENER, Inside and Out. Abstainer.—JOHN DANIELS, The Ynysydaren Market Gardens, Ystalyfera, Swansea Valley.

WANTED, AT ONCE, TWO good JOB-BING GARDENERS for New Work.—HARWOOD, Balham Nursery, S.W.

WANTED, MAN for Kitchen Garden, &c. Take turn on Duty. 16s. weekly, bothy, vegetables, &c. State age, with copies of references.—J. MURRAY, Lythe Hill, Haslemere.

WANTED, in the Vineries, a MAN.—Well up in Pruning, Packing, &c.—Apply ARTHUR MATTHEWS, The Nurseries, Waltham Cross, N.

WANTED, MARRIED MAN; crops chiefly Vines, Peaches, Tomatoes, for Market. State age and experience. Wages 18s. and cottage.—THE TODDINGTON ORCHARD CO., LTD., Winchcombe, Glos.

WANTED, ENERGETIC MAN, aged between 30 and 40, for management of Seed and Bulb Department of a growing business, and despatch of orders. One who could answer amateur's difficulties in a smart manner required. Principally post despatch, the result of advertising.—SEEDSMAN, Box 5, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

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WANTED, for Provincial Nursery in Scotland, UNDER FOREMAN. Active and reliable man, who is thoroughly conversant with the Propagation of Bedding Plants, Chrysanthemums, Dahlias, Ferns, Palms, &c. With Nursery experience preferred. State wages, and send copies of certificates.—S. K., Box 20, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

WANTED, JOURNEYMAN; crops chiefly Vines, Peaches, Tomatoes for Market. State age and experience. Wages 16s. and bothy.—THE TODDINGTON ORCHARD CO., LTD., Winchcombe, Gloucestershire.

WANTED, JOURNEYMAN for pleasure grounds. Every third week Sunday duty. Wages 16s. weekly, bothy, milk, vegetables. State age, &c.—FLEMING, Wexham, Slough.

WANTED, YOUNG MAN, with good knowledge of Glass, for Inside and Outside Work. Wages 16s. with rooms, &c.—Apply, stating age and particulars, to H. JEFFREY, Oakhurst Court, South Godstone.

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WANTED, YOUNG LAD, about 15 or 16, as APPRENTICE to Seed and Bulb Trade. Must be willing and obliging.—CANHAM, Seed Merchant, York.

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THE

Gardeners' Chronicle

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TROPICAL FRUITS FOR CHRISTMAS.

SOME fourteen years ago, namely in 1886, at the Colonial and Indian Exhibition, held at South Kensington, a considerable amount of interest was excited by the appearance in the Colonial Market attached to the Exhibition of fresh fruits that had been brought by rapid-travelling steamers, chiefly from the West Indies, but also from our far distant Australasian Colonies. It was thought, and hoped at that time, that it would not be long before such fruits as were then seen and tasted in a fresh state, would become regular articles of commerce, to be followed by others that would prove novelties, and perhaps tickle the palate of the British public; but when we look back and find that fourteen years have passed, and when we look in our fruiterers' shop-windows to find the anticipated fruits are not there, we cannot say that the hopes and prophecies of 1886 have been realised in 1900. Nevertheless we do occasionally see some out-of-the-way products of distant climes, and this more especially at the Christmas season, when every effort is made in the commercial world, whether manufacturing or otherwise, to produce some novelty.

Amongst those fruits that appear almost at regular intervals, and may be seen at the

present time, we may mention those of the Citrus genus, for besides Lemons and Oranges in their several well-known varieties, there are Shaddock, the very large fruits of Citrus Decumana, a tree of 30 to 40 feet, native of the Malayan and Polynesian islands, and commonly cultivated in India. Also Pommelos, a smaller-fruited variety of the same plant, and the pretty little Kumquat (Citrus japonica), a native of Japan and China, where it fruits very freely, and these, preserved in jars in syrup, are a great delicacy (see *Gardeners' Chronicle*, vol. vii., 1890, at p. 393).

The genus Anona is also periodically represented, and comes to add to the list of Christmas fruits in the shape of the Cherimoyer (Anona Cherimolia) (see fig. 150, p. 460), the produce of a tree 15 to 20 feet high, found in Peru, New Grenada, Venezuela, and Brazil. A number of varieties are known, so that the fruits differ much in appearance, size, and flavour. By some this fruit is considered the most delicious of all the species. In some forms the flesh is white, in others of a creamy-white colour, in which the black seeds are embedded. The fruits vary from 4 to 6 inches long, and externally are usually of a light green colour. The plant grows well in Madeira, from whence the fruits are mostly imported.

The next best known fruit of the genus Anona is probably the Sweet Sop (Anona squamosa), a native of the Malay Islands, but now much cultivated both in the East and West Indies, as well as in other tropical countries. The fruit is nearly globose, from 2 to 2½ inches across, marked on the outside with numerous very distinct warts or knobs; the rind is thick, enclosing a mass of creamy-white pulp, containing numerous black seeds. In well-grown and well-ripened fruits, the pulp has a very rich and agreeable flavour. The other species of Anona occasionally seen, but less frequently, are the Sour Sop (A. muricata), and the Custard-Apple (A. reticulata). The first of these is a much larger fruit than the Sweet Sop, of a greenish colour externally, and covered with prickles; it has a white pulp. The tree is a native of the West Indies. The Custard-Apple is also a native of the West Indies; it has a heart-shaped fruit with a smoother surface than the last-named, but marked with faint reticulation; the pulp is yellowish, and though generally eaten in the countries where the tree is common, it is not so esteemed as the other two species.

As a tropical fruit, the Mango (*Mangifera indica*), which can now be seen in the London shops, has, perhaps, the widest reputation; it is a native of India, but is very generally cultivated in the tropics. It is in India, however, that it is still best known under a multitude of varieties; some of which produce fruits of very little value for edible purposes. Though Mangos are so largely eaten by the natives not only in India, but in all countries where the plant has been introduced, the taste for fresh Mangos amongst Europeans is said to be an acquired one. In the form of chutney the fruits are well known in England as a condiment; and the young fruits of the best varieties are also to be had preserved in syrup in bottles, but in this form the Mango is an expensive delicacy for dessert.

It seems that with a plant so generally grown, and one that produces its fruit in such abundance, we ought reasonably to expect Mangos to be more generally obtainable here, an expectation that is supported by the following extract from a report on the fruit exporting prospects

of Dominica, where we read "The supply of Mangos in the island is practically unlimited, for the tree is one of the commonest in the lowlands. The people being very fond of the fruit indeed, in the season it forms an important part of their food. They eat it whilst walking along the roads, and throw the seeds away; these soon germinate, and as the seedlings are very hardy, the tree springs up in all directions, and it is found by the sides of all the roads and paths. There are many varieties of Mango in the island. The grafted kinds yield the best and most luscious fruits. Large numbers of Mangos are shipped to the neighbouring islands. The season extends from April to October."

Another fruit which is much used in tropical America and the West Indies, where it is a native, but not so often seen in the London fruiterers, is the Avocado Pear (*Persea gratissima*). It is the produce of a tree some 30 feet high, belonging to the Laurel family. In size and appearance the fruit is like a large Pear covered with a smooth brownish-green or purplish skin. The pulp, when fully ripe, has a Marrow-like taste, which, though not very agreeable to the European taste at first, is said to become so after a short time. It is said that persons unaccustomed to its use often mix wine, lime-juice, sugar, or some other flavouring agent with the pulp. In many of the West Indian Islands, where the fruit is in season from August to October, it enters largely into the food supply of the people.

Perhaps one of the best known fruits, or, rather, one that makes its appearance in the English market with more regularity than any other of tropical origin, is the Lychee, or Litchi (*Nephelium Litchi*) (figs. 142, 143, p. 450). The small, globular, brown-warted fruits are at the present time to be found in most of the best greengrocers and fruiterers, but they are an expensive fruit, seeing how little of them is actually edible, and the price at which they are usually sold. The Lychee is a native of China and the East Indian Islands. The fruits vary in size and shape, according to the variety, but they are usually about the size of a small Walnut, having a thin rind, which, upon drying, becomes brittle or woody, and is covered with small protuberances. In a fresh state, the fruits are either red or of a greenish colour tinged with pink, and filled with a white or flesh-coloured jelly-like pulp, or arillus, which completely envelops the seed. This pulp has, when fresh, a delicious, sweetish acid, and refreshing taste, cooling and grateful to the palate, especially in hot weather. As seen in this country, however, the fleshy arillus has become shrivelled and black, enclosing the large, shining black seed, and its flavour has but little to recommend it, not so much indeed as a Muscatel or Prune. In China, Siam, and other eastern countries, it is very highly esteemed both in the fresh and in the dried states, and is prepared in a variety of ways. By taking off the thin outer rind when the fruits are fully ripe, and removing the seed from the centre, and by preserving the pulp thus prepared in syrup, a delicious dessert fruit is produced. Treated in this way, and packed in tins in the same way that Pine-apple chunks are now so successfully imported, a new addition to our tables might be introduced.

Many other suggestions of a similar nature might be made with fruits of various countries and belonging to various natural orders, and with regard to this latter part of the question, it is one that requires much consideration to ensure success. Thus, in the Rosaceæ we have an order that is so well known as producing

such a large number of our best known and most highly valued edible fruits, that we should scarcely expect to find an exception to a wholesome fruited species; at the same time we should approach the seeds with care, lest they might contain the same poisonous principle as those of the Bitter Almond. As illustrations of the general utility of rosaceous fruits, it is necessary only to mention the Loquat or Japan Medlar (*Eriobotrya japonica*), the Siberian Crab (*Pyrus baccata*), *Pyrus japonica*, *P. Maulei*, and others.

Many of these fruits, which are austere in a fresh or even ripened state, lose much of this flavour when the ripening is carried to the condition in which the Medlar is eaten, or when made into jam; the sugar counteracts the austerity, converting it into just sufficient roughness to the palate to make it most agreeable. Again, in the Sapotaceæ and Ebenaceæ, this austere character is present in the fruits even in a greater degree, amounting in some species to a strong astringency; as for instance in the genus *Diospyros*, notably in the Persimmon (*Diospyros virginiana*) where it is so marked, that it is impossible to eat it till it is completely bletted.

The Chinese Date-Plum (*D. Kaki*) though a more recent introduction, is perhaps better known than the North American Persimmon, but inasmuch as it cannot be eaten till it has arrived at that stage known as "dead ripe," we cannot expect to find it as an article of general sale in a fresh state. Preserved in syrup, however, or even candied, the fruits are very tasty, and might be imported. In the Sapotaceæ a somewhat similar character pervades the fruits, which are also marked by the presence of a milky juice, especially in an unripe state. This milky juice, when evaporated to dryness, becomes plastic and of a similar nature to gutta-percha, which, indeed, is the product of *Dichopsis gutta*, a tree belonging to this order. Nevertheless there are several well-known edible fruits, such for instance, as the Star Apple of the West Indies (*Chrysophyllum cainito*), which is about the size of a very large Apple, but somewhat depressed. Though the fruit is much esteemed in the West Indies for its soft, sweet pulp, it has never, so far as I am aware, been seen in the English market; neither has the allied fruit, the Maunice sapote, or Marmalade Plum (*Lucuma mammosa*), the pulp of which has a very luscious flavour, resembling, it is said, that of Quince marmalade. The tree is a native of the West Indies and tropical America, and is extensively cultivated for the sake of its fruits, which are from 3 to 5 inches long, and oval in shape. The Naseberry or Sapodilla Plum (*Achras sapota*), the produce of another Sapotaneous tree, is sometimes seen in our fruiterers, though but seldom. The tree is found both naturally and under cultivation in South America and the West Indies, where the fruits are ripe and fit for gathering from October to January. Referring to the attempts that were made in 1886 to introduce these fruits to British commerce, it was said that in Dominica the fruits were usually gathered in a half ripe state, and allowed to ripen in the house, as the frugivorous bats are very fond of them, and they make sad havoc amongst the ripe fruit. By means of the cold chamber system, these fruits were successfully transferred from Demerara to England in 1886, where, in the colonial market of the Colonial and Indian Exhibition they were on sale, and were tested during the conferences

that were held in connection with the Exhibition. The result of these experiments went to prove the necessity of an accurate knowledge of the nature of the different fruits to which

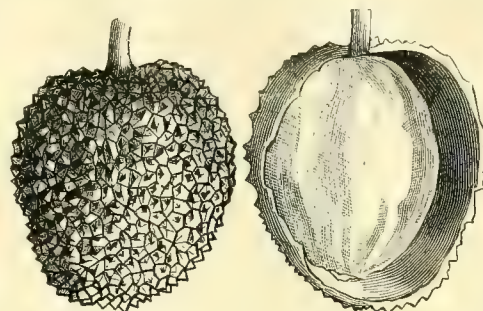


FIG. 142.—FRUIT OF LITCHI. FIG. 143.—LITCHI: VERTICAL SECTION.

we have already alluded to; for, as we have said, fruits of the order Sapotaceæ must be fully ripe before being eaten. One consignment, we think the first, arrived just in

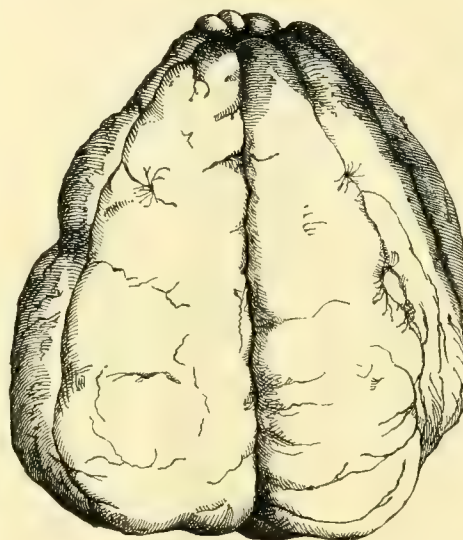


FIG. 144.—SCAEOLEA EDULE.

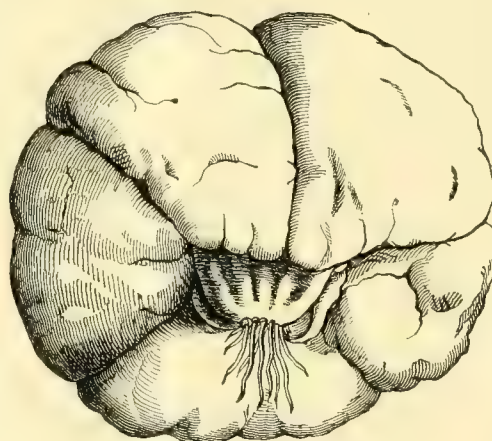


FIG. 145.—SCAEOLEA EDULE, WITH EMBRYO OF SEED GERMINATING WITHIN THE FRUIT. (SEE PP. 449 AND 458.)

the proper condition, and being put on sale at once were soon disposed of to the satisfaction of the purchasers. A second consignment, however, arrived in too green a state, so that the fruits when sold contained much of the milky juice which, being set free by the teeth, coagulated by the warmth of the mouth,

sticking the lips together, and producing much amusement amongst the purchasers and lookers-on.

The attention that has been directed during the past twelve months or more to South Africa should result in the introduction of some of the best known fruits of that country, as, for instance, the Kei Apple (*Aberia caffra*) (see fig. 152, p. 462), the produce of a shrub common in the eastern districts of the Cape of Good Hope and in Kafirland, where the plant is much grown for hedges in consequence of the numerous strong spines with which it is covered. The fruits are about the size of a small Apple, and are of a golden-yellow colour, extremely acid in an unripe state, so that they are frequently used as a pickle, as well as for making preserve, which, from the samples we have had an opportunity of tasting, has much to recommend it. Another fruit, known as the Natal Plum, the produce of *Carissa grandiflora*, is equally good in the form of jam, to which we can also testify. The fruits themselves are somewhat like a Plum in appearance, varying from the size of an Olive to that of a small Egg-Plum, reddish in colour at first, but changing as they ripen to a dark violet hue. When quite ripe they have an agreeable sub-acid taste. Considering the large numbers of British troops and others that have overrun South Africa of late, and the prospect of many more who will find their homes there in the future, these and other fruits of the colony may by this time be well known to many, and ere long may be found in English commerce.

We have hitherto spoken of fruits that have recommendations chiefly for dessert use; but there are some that can never be used other than as a vegetable, and in this category may be placed the Cho-Cho, the fruit of the cucurbitaceous plant, *Sesquium edule* (figs. 144, 145), of the West Indies, but which has in recent years become much grown in Madeira and the Atlantic Islands. A few years ago this was only to be seen occasionally in Covent Garden Market; at the present time they are to be found in most of the best greengrocers in any large town.

Of the Nut tribe also, periodic importations of Brazil-nut, fruits containing the seeds, are not uncommon, and are now appearing in the shop windows, often, to the surprise and enquiry of many persons as to what good such woody fruits can possibly be.

An examination of the shop windows of London and other large towns is often an instructive way of spending an hour, especially at this season of the year, when what one actually sees frequently brings thoughts of what one ought to see, but which are still absent. *John R. Jackson, Museums, Kew.*

THE POMMELO.

IN writing the *Oranges and Lemons of India and Ceylon*, and the derivation of their names, I was much puzzled to discover the origin of the word Pomello, which is the common name given by the English in India to *Citrus Decumana*. Through the help of Rumphius' *Flora of Amboyna*, I got as far as *Pompelmces*, which was the name given by the Dutch to this *Citrus*; but how did the Dutch come to call it *Pompelmces*? That was the difficulty, and I could not discover the origin of this name.

I happen to be reading the *Life and Letters of Thomas Henry Huxley*, vol. i. He had been surgeon to the surveying-ship *Rattlesnake*, which touched at the Mauritius, and on May 15, 1847, in a letter to his mother, given on p. 35, he wrote: "Pamplemousses is a small village about 7 miles

from Port Louis, and the road to it is lined by rows of Tamarind-trees, of Coconut-trees, and Sugar-canes."

Incidentally, it may be noted that some years ago a terrible hurricane passed over the Isle de France, and probably left that beautiful avenue a ruin. However, in the name of this small village we probably meet with the origin of the word Pommelo. Pamplemousses may not improbably have been the name given to this village by the aborigines of the island; but then, again, why did the Dutch give the name of Pompelmoe to the *Citrus Decumana*? In all probability the Dutch first became acquainted with this fruit at Pamplemousses, and gave it the name of the place where they got it, just as in the Levant the Valencia Orange is called Portogan, and in other places Portogallo. But suppose the Dutch had named it

unfortunate name of the small village has had to put up with. In various parts of South India, the Pommelo is called Poomlimas, Pumpalimas, Bambulimas, Bombarimasa, and others!

In an English translation of *Paul and Virginia*, frequent mention is made of the "Shaddock-grove," and a friend who was Judge in the Mauritius informs me that the Pommelo, there called Shaddock, is very common all over the island. In the Mauritius there is a considerable Arab population who are great traders, and control the grain market, consisting chiefly of Wheat, Dal, and Rice, imported for the use of the large East Indian population. These Arab traders are not improbably the descendants of the ancient Arab navigators of pre-Dutch times. The Pommelo was most probably introduced into the Mauritius by them. This tree being now very plentiful in that

his gardener, a Cultural Commendation was also given. The sepals and petals are white, tinted with rose towards the tips, and more heavily with rose-purple on the reverse side; the surface bearing purplish-brown blotches. The lip has a yellow crest, with purple spots around it, the apical portion or blade being pure white.

CYMBIDIUM TRACYANUM.

When the first specimen of this noble Orchid, now known as "The Dell variety," appeared, which was described in the *Gardeners' Chronicle*, December 20, 1890, and illustrated in the issue for January 31, 1891, p. 137, it was thought that it would always remain a very rare plant, and such indeed was the case until quite recently. But there appears to have been a large importation of the species at some time or other, though probably the plants arrived in bad condition, and consequently have but lately flowered. Three flowers have been sent us by Mr. J. O. Clarke, gr. to Ludwig Mond, Esq., who supplies the following information:—

"I send flowers of *Cymbidium Tracyanum* from a huge specimen which I purchased eight years ago as an established, unflowered plant, for 15s. It has flourished, but borne no flowers until this year. It has now two fine spikes on different parts of the plant, the flowers on each being different, as you will see. Still another portion of the plant remains to flower. The old picture in *Punch* of the two elderly people leaning over newly discovered vegetation, and styled, 'The burning question of the day—Is it a weed or a Vegetable-Marrow?' would well indicate my anxious daily examination of the plant during the development of the flowers and my pleasure at the result. The larger and darker flower, with dark orange base to the lip, and purplish-brown lines on the sepals and petals, is the finest I have seen."

THE ROSARY.

NEW HOME-RAISED ROSES.

No one can doubt that a great revolution has taken place in the production of new Roses raised in this country; there have, of course, always been some good Roses which we can claim as our own. Beauty of Waltham was sent out from Waltham Cross nearly forty years ago, and it is still found in many a winning stand. Duke of Edinburgh came from Cheshunt six years later, and it will be a long time before either of these Roses can be dispensed with. *Devoniensis* is still older, having been raised in 1838. French raisers were, of course, busy, and sent us a number of flowers; but it was not until the appearance of Mr. Henry Bennett on the scene that any systematic effort was made in that direction in this country, and no one can doubt that success attended his efforts or the stimulus which he gave to a more scientific handling of the subject. "Her Majesty" produced a great sensation, which however was not sustained; the flower was inclined to coarseness, and the plant to mildew. In Mrs. John Laing we have probably the best of all Roses as an exhibition flower, it is so free and so constant, rarely ever producing a bad flower, and blooming right on into the autumn, and it is no wonder that it takes the leading place in every authorised list of Roses. It was probably owing to the stimulus given by Mr. Bennett's success, that we owe the rise of that celebrated firm of Alexander Dickson & Sons, of Newtownards, Ireland, who have during the past few years given us so many excellent flowers, and they are still going on steadily in the same course. They have attained the unique honour of winning eleven gold medals of the National Rose Society for seedlings of their own raising; and Mr. W. J. Grant, who this year visited their nurseries at Newtownards, assures me that they have a number of flowers that he thinks will be found worthy of that honour in the future. There are two English firms of long standing, and well known reputation, who are steadily pursuing the same course, Messrs. William Paul & Son, at Waltham



FIG. 146 — ODONTOGLOSSUM × ROLFEAE VAR. MELEAGRIS.

after that place, how did the Pommelo get to the Mauritius?

In my researches I came to the conclusion that the genus *Citrus* originated in Southern China, and Rumphius said as much of one of the varieties of Pommelos. In his time, the different species of *Citrus* were all over the islands of the Malay Archipelago. There are two ways by which this fruit could have reached the Mauritius. The Pommelo floats beautifully, and it may have been carried by ocean currents; but more probably it was carried by Arab or Persian seamen, who navigated those seas along the coast as far as China, and probably also down the east coast of Africa, in pre-Portuguese and pre-Dutch times.

Considering that Pommelos can be taken long distances, and be kept for a long time, without spoiling, it seems astonishing that the red-fleshed and thin-skinned Pommelo of Bombay has never found its way to the London market.

The British sailor has turned Pompelmoe into Pommelnose; from this the plural Pommelos, and finally the singular Pommelo were evolved; and just see to what extent of phonetic corruption that

island would indicate that its introduction was effected a long time ago. *E. Bonavia, M.D.*

[The Pommelo is not mentioned in Baker's *Flora of the Mauritius*. Ed.]

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM × ROLFEAE VAR. MELEAGRIS.

OUR illustration (fig. 146) represents this fine hybrid *Odontoglossum* raised between *O. Pescatorei* and *O. Harryanum*, and which was awarded a First-class Certificate when shown by the owner, W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr., Mr. W. Stevens), at the meeting of the Orchid Committee of the Royal Horticultural Society on December 4.

The hybrid was raised in the first place by M. Chas. Vuylsteke, of Loochristy, Ghent, who has shown several fine varieties. Mr. Thompson's variety "Meleagris" was adjudged to be the best yet seen, and the plant being superbly cultivated, as is usual with the subjects under the hands of

Cross; and Messrs. Paul & Son, at Cheshunt. I have now before me the lists of the forthcoming new Roses to be sent out by these three firms. Some of these flowers have been seen at the Drill Hall and other places, where they have been much admired; and it will be observed that they do not include what are merely considered exhibition varieties, but many that are suitable for garden and decorative purposes. Instead, however, of giving any description of those that have been seen, I think it will be better to let the raisers speak for themselves.

From the Newtownards firm come the following—

Duchess of Portland (H. T.).—A rose of great beauty; colour pale sulphur-yellow, with a greenish tinge occasionally. The blooms are large, full, and of perfect symmetry; petals very smooth, circular, and of great substance; growth excellent, and of free-flowering habit. Awarded Gold Medal of National Rose Society, July 19, 1900, and 1st prize North Lonsdale Rose Show, and several First-class Certificates at other shows.

Lady Moyra Beauclerc (H. T.).—A charming and most distinct variety; colour madder-rose, with silvery reflexes; blooms very large and full, very free-blooming. A thoroughly distinct and splendid Rose. Card of Commendation, National Rose Society, and several First-class Certificates.

Mildred Grant (H. T.).—A truly magnificent and most meritorious Rose; colour very white, with an occasional flush of pale peach; the blooms are of enormous size, perfectly formed, with high-pointed centre; the petals are unusually large and massive; growth very robust and free-flowering. Awarded Gold Medal of National Rose Society, and numerous 1st prizes and certificates.

Mamie.—This variety was exhibited under the name of "Mrs. Conway Jones," and has been shown in all our leading stands. It is a variety of undoubted merit, the blooms are very large and full, and of the most perfect form, with high, pointed centre, petals large, and well shaped; colour carmine-rose, shaded yellow at base of petals; growth vigorous; very beautiful; free blooming, and most reliable for exhibition purposes. Awarded two First-class Certificates.

From Waltham Cross we may look for the following from Messrs. Wm. Paul & Son:—

Alexandra (T.).—Pale buff-flowers, with orange-yellow centre, shaded with apricot and bronze. The raiser had the honour of presenting this flower to his Royal Highness the Prince of Wales at the Royal Botanic Society's fête in June, 1898, when his Royal Highness was graciously pleased to name the variety after H.R.H. the Princess of Wales.

Corallina (T.).—Deep rosy-crimson flowers, with large petals, especially beautiful in the bud state; this is a strong-growing variety, which, combined with its free-blooming qualities, renders it one of the most charming Roses in cultivation for massing and cutting. It received an Award of Merit from the Royal Horticultural Society.

Sulphurea (T.).—Bright sulphur-yellow flower, distinct and striking. This variety is very hardy, and very free blooming; a fine yellow bedding or massing Rose.

Boadicea (T.).—A delicate rosy-tinted flower; it has been shown several times in excellent condition.

Milton (H. P.).—A beautiful crimson flower, finely shown and figured in our issue of July 30, 1898.

Messrs. Paul & Son, of Cheshunt, have of late years, seeing the trend of opinion amongst horticulturists towards decorative rather than exhibition Roses, given their attention to this section of the flower. They have already given to us some beautiful single flowers, such as Carmine Pillar, and Royal Scarlet, and now announce the following, in three of which they have used Crimson Rambler, that most popular Japanese Polyantha Rose, as a parent—

The Lion.—A single-flowered form, of perfectly rambling habit and freedom of bloom. The flowers

are in the way of Carmine Pillar, but are of a rich crimson, very beautiful and bright, and they are produced some fourteen days or three weeks later than that variety. It will be a fine pillar Rose.

Purple East.—This is a Rose of superb habit, with shoots of enormous vigour, and trusses of great size and extent. The flowers are semi-double, large, some 3 or 4 inches across. The habit is erect, and the variety is to a very considerable extent perpetual. The colour is rosy-carmine and vivid purple, not one which will appeal to all tastes, but the massive and distinct growth, 12 to 16 feet, and general character of the variety recommend it for cultivation.

The Wallflower.—This Rose has excited the admiration of all who have seen it. It is the perfection of a hedge or wall Rose; its habit of growth being naturally somewhat flat, it lends itself easily to hedge or wall training. It flowers all along the shoots from base to tip, presenting a solid face of rosy-like crimson blooms; a most attractive colour. The flowers are much larger, somewhat lighter and softer in colouring than Crimson Rambler. It received the highest award (xxx) at the Royal Horticultural Society's Conference on Hybridisation, 1899, under the name of Scarlet Climber.

Una.—This is an almost single Rose of great beauty, it is [from] the Dog Rose crossed with the Dijon Teas. Its habit is rambling and Briar-like, the buds are well formed and of a clear pale buff yellow; the flowers almost white, of great purity of form and colour. It is essentially a hedge and arch Rose, and has been universally admired.

From Benjamin R. Cant & Sons, we are promised—

Mrs. B. R. Cant.—The well-known Colchester firm, so long associated with the name of that much-respected veteran who has lately passed away from among us, have announced what promises to be a remarkable addition to our Tea Roses; it is described as of a deep rose colour on the outer petals, while the inner petals are a soft silvery rose, suffused with buff at the base. Very vigorous in growth, the flowers full and compact, the foliage is a deep rich blue-green, in itself very attractive. This flower obtained an unanimous Award of Merit from the Floral Committee of the Royal Horticultural Society on September 25, thus proving, with its other good qualities, that it is a fine autumnal bloomer.

I think there is one thing remarkable in these announcements, namely, the number of Tea-scented Roses. Time was when the only English raised Tea Rose we could boast of was *Devoniensis*, but now each year brings us valuable additions of home-raised Roses belonging to this class. We all hope to have the pleasure of seeing some, if not all, of these flowers at the exhibitions of 1901. *Wild Rose*.

FLORISTS' FLOWERS.

CINERARIAS.

THESE plants are rapidly finishing up their growth, the mild, open weather allowing abundance of air being admitted during the day, and even a chink at night may be left on where there is absolutely no danger of frost. A too damp and stagnant atmosphere at this season is not to be desired with the Cineraria: it causes flabbiness and softness by the relaxation of the leaf-tissues, the leaf-stalk becoming attenuated; the result is, the foliage cannot sustain or balance itself. Such plants as here depicted can never produce good heads of bloom; the aim should be directed towards the production of stocky, stiff-built plants that have never been coddled, but have been growing steadily during late summer and autumn in quarters well up to the glass, and with no lack of air admitted on all possible occasions. Such plants treated in this manner are rarely infested to any degree with aphids, and light vaporisings at intervals keep them perfectly clean. Should the forwardest plants have their pots filled with roots, and the flower-buds be showing, a little soot-

water or sheep-manure steeped in water given alternately with clear water, is a good and safe stimulant for them. See that all manurial waterings are clear without sediment, as anything tending to clog or prevent free percolation is most injurious to any plant-life. Where a few fine individual blooms are desired, thin out with a pair of Vine-scissors the smaller side buds, and any that appear one-sided or deformed, selecting only the longest-shaped buds and those at the apex of the flower-stalks, as producing the finest flowers. A well-thinned bunch of Grapes is a good example of the mode this operation should be performed on the Cineraria; a neat painted stake or two is sometimes necessary to hold out any shoots unduly crowded together. At this season be watchful against sudden fluctuations of temperature and frosty nights, so as not to be caught napping. If not already done, examine the heating arrangement that it acts rightly, so that on the first reminder that this present weather is not seasonable, we may be equal to any emergency, as it is generally the first frosts that find neglect or carelessness out.

CHINESE PRIMULAS.

These free, winter-flowering subjects are ever popular with us, and coming in at a time when bloom generally is scarce, do much towards embellishing conservatories and those houses devoted to them during the flowering period. Where large pots have been used, and these are only partially filled with roots, it frequently happens after a spell of dull, damp weather, or it might be incautious watering, that such plants are apt to "damp off" at the collar or base of the plant. The only remedy, or rather check, usually recommended is a little crushed charcoal placed round the bases of the plants; but as prevention is better than cure, the best advice to act upon is to never overpot. Primulas do remarkably well in small pots for general purposes, the pots get well filled with roots, and are far less liable to damping than those grown in large pots, and are more amenable to feeding. I have invariably found that guano used at the rate of a teaspoonful to the gallon of water excellent as a change from soot-water occasionally. If, from shallow potting, the plants are not steady and balanced, a small peg or two pointed finely and pushed down in the form of a triangle around the stem between the leaf-stalks, will steady the plant considerably; but this should not be required if the plants had been potted low enough to make them firm at the base. The temperature now for Primulas is the medium one of 55°. Doubles, especially the old white form, require the drier atmosphere of a shelf well up to the light. The many-hued single varieties may be made to look very imposing massed together, say, a groundwork of some soft-coloured variety surmounted by diamond-shaped masses of scarlet and white placed alternately down the centre of the staging; this, with an effective edging plant, makes the whole very pleasing and striking to the eye. It frequently happens that when staged without reference to colour the effect is not nearly so pronounced, one shade killing the other. *D. G.*

LATE CHRYSANTHEMUMS.

For those gardeners who, like myself, have large conservatories to supply with flowers at all times of the year, late Chrysanthemums form a great feature, and should now be calling for special attention in the way of selecting the best varieties for the coming year. It so happens in many a garden that too much space is allowed for those varieties which flower in November, and as a consequence the show comes all at once and so goes away, leaving but few things for a display when the Christmas festivities arrive. With the considerable number of varieties now to be got, it is possible to keep up, with an amount of forethought, a good display well into the New Year. It is a mistake to grow too many varieties; far better grow more of such as can be depended upon. Amongst those

I know to be most useful for late work are the good old favourite W. H. Lincoln, which in a sense is hard to beat ; it is a variety which stands well in a lofty house, and is certainly one of the very best yellows. Golden Gate is another yellow, if anything more beautiful in form than Lincoln, but its lasting powers are not as great, its florets being softer and longer. Little need be said of the handsome white variety Niveum. When grown in bush-form and disbudded it is hard to beat, and when arranged in groups by itself it makes a striking

useful variety, but it must be grown as a bush to get it in flower at this date and later. *G. Burrows, The Dell, King's Norton.*

THE AURICULA

Mid-winter is the time of rest for our show Auriculas, and at that season they require considerable attention, principally to prevent any injury to the plants from decaying leaves or flower-stems in the centre of the plants. There has not been much frost this season, but on two occasions

getting into the centre of the plants. A source of danger, even greater than that of decaying leaves, is the decay of the old flower-stems, which, when they dry up, it is easy to pull them out ; but the softer stems die down, full of moisture, and if an effort be made to pull them out they break short off, and it is difficult to get out the decaying parts from the centre of the plants. Many valuable plants have been lost from this cause. Choice show Auriculas are well worth a little extra attention in winter and early in the new year ; it is better to place them

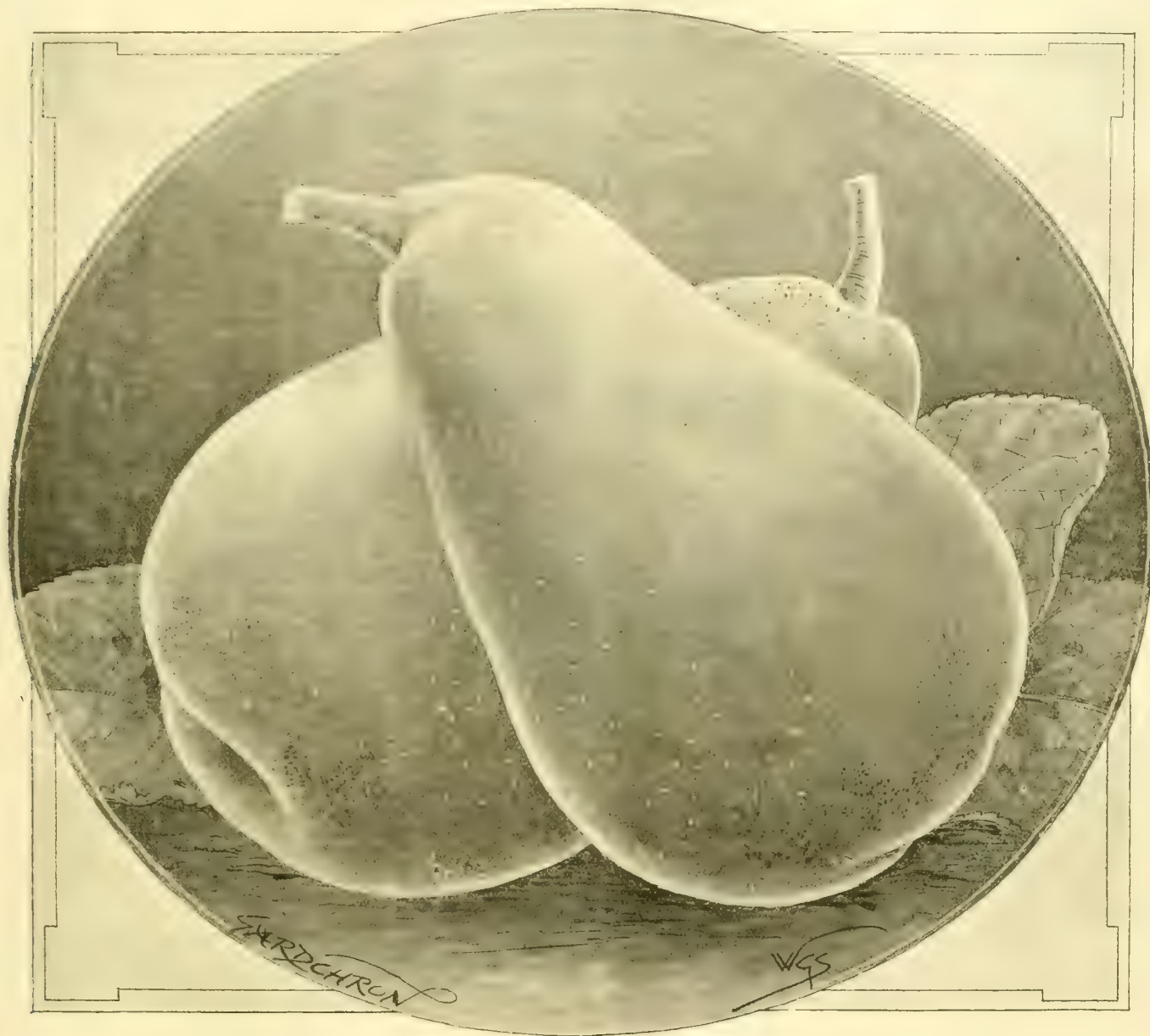


FIG. 147.—NEW PEAR, CHARLES ERNEST.

(For a description of this new variety, see Royal Horticultural Society's Report, *Gardeners' Chronicle*, December 8, 1900, p. 421.)

picture. Princess Victoria is another white which deserves to be better known on account of its being a late bloomer ; and I can strongly recommend it to be grown in quantity for Christmas decoration, for nothing could be more useful and pretty for a large winter garden, when interspersed amongst Richardias and Euphorbias (Poinsettias). To follow this a good batch of L. Canning should be grown—a variety which may be depended upon to flower in the month of January. The plant has a dwarf habit, and it is very useful for arranging in groups of small size. For a scarlet, or rather crimson-red, I have found Mathew Hodgson, grown in bush form, to be an exceedingly late and

the thermometer fell 8° or 10° below the freezing-point ; the effect of this was seen soon after in the outer leaves dying off more rapidly than heretofore, and if they are not quickly and carefully removed, valuable plants may be permanently injured. The plants ought also to be very carefully attended to as to watering. The old system of drying the plants off so that the soil became dust-dry, and the leaves flabby, was a grave error. It took the plants some time to recover in the spring, consequently the trusses were poor, and the delicate grey, green, and white margins undecided. Water must be applied to prevent this shrinkage of the plants. Care must also be taken to prevent water

in a greenhouse which can be heated on occasion. The fanciers who have collections of choice varieties are careful to place their plants in a house having some means of being heated on frosty nights, for should the edged Auriculas get caught by frost when the pips are in process of development, they are not likely to open out flat. Early in February the entire collection may be removed from the frames into the Auricula-house, they being ready to start into active growth. Any offsets may be removed from the plants at this time, and be planted in sandy soil in small flower-pots ; the surface soil may be removed to the depth of an inch or so, and replaced with a mixtur

of good turfy loam and decayed manure in equal proportions. Some persons add artificial manures to the potting-soil and to that used as a surface-dressing. I advise decayed manure only, for the reason that artificial manures are injurious to Auriculas. Press this surface-dressing firmly, and having done this, the plants will require more water; they ought also to be placed near to the roof, and air admitted freely, excepting when frosty winds are blowing—even so, a small amount of ventilation at the top of the house is required to cause circulation of the air.

In March the trusses will be well advanced, and as one property of an Auricula is a stout and elastic flower-stem, that will hold up the truss without a support of any kind, fanciers object to the use of sticks entirely, but the stems of some varieties are longer than they ought to be, nor are they quite so stout and elastic, and in this case a neat flower-stick is wanted to keep the truss erect. In order to get well-developed "pips," it is sometimes necessary to thin some of them out, for some varieties produce far too many. A score or more is sometimes produced on a single truss, half of these, or even more, may be thinned out. The smaller and inferior pips are in the centre of the truss, and should be removed; and if two or three trusses form on one plant, the two which are nearest the centre should be removed—but only the pips, for if the stem is broken at this season when the sap is in full flow, the part remaining may die down and cause rot in the centre. Those who want to get all sections of the show Auriculas in flower at one time (and this is necessary if the plants are intended for exhibition) must allow the selfs to remain in the cold frames three weeks longer than the edged varieties, for not only do the selfs come in bloom earlier, but they also die off more quickly. A green, grey, or white edged variety may last in good condition for a month in flower, but the selfs fall off in half that time. J. Douglas.

(To be continued.)

THE BULB GARDEN.

CROCUS BIFLORUS.

AMONG the rather numerous species of *Crocus* which flower in the spring months, there are few equal in value to *Crocus biflorus* and its varieties, if we except the golden-yellow *Crocus*, or the varieties of *Crocus vernus* which have come under the improving hands of the Dutch growers. *Crocus biflorus* comes so early, and is so hardy, that it ought to be more widely grown than hitherto. This may be said of the form known as the type, and as much may be said for some of its varieties. It is a most variable plant, and one, too, which has a wide range of habitat, although it is essentially a low-land plant.

The form from Italy has been taken as the type, and has been long grown, although the slightly larger one, known as the "Cloth of Silver" or "Scotch *Crocus*," has long been familiar to readers of bygone horticultural literature. The Italian plant, however, seems to have its outer segments more deeply coated with buff than that generally known as the "Scotch *Crocus*." *C. versicolor* is sometimes met with as the "Cloth of Silver," though authorities place the name to *C. biflorus*. Either the type or the "Scotch *Crocus*" makes a fine display in the border, rock-garden, or in grass in early spring. Their flowers, handsome as they are when unopened, with their buff outsides striped with purple, are finer still when they open out flat in the sun, and show their shining white segments with a yellow base, and giving forth a honey-like fragrance, which allures the bees in great numbers to the blossoms. Their beauty is even increased when the leaves come ere the flowers have passed away, for the grassy foliage seems but to add softness and grace to the mass of flowers. Even finer than the typical plant is one sold as *C. biflorus*

argenteus, whose flowers have a peculiar tinge of pale blue in their segments, which, when the sun shines, makes one think of a patch of snow on which that luminary is directing her rays. A group of this variety, which, like the type of the "Scotch *Crocus*," is among the cheapest of our *Crocuses*—apart from the Dutch forms, now so low in price—has a handsome effect.

A charming little flower is *C. estriatus*, which has its outer segments of a pretty self-buff or cream colour, and the interior of a pearly shade. It comes from Florence. The form known as *Weldeni* is variable, and a collection of its varieties would be very interesting. Their principal features lie in the graining, or, as Maw called it, the "freckling" of the outer segments with bright purple. Some pretty varieties of this form exist in the garden of Mr. E. A. Bowles, of Myddelton House, Waltham Cross. Mr. Bowles has a large collection of these *Croci*, to which he devotes much attention. Herbert's variety, named *nubigenus*, which is a small form from Asia Minor, with the outer segments "freckled" with dull purplish-brown, I have never been able to obtain; but Boissier's *C. Pestalozzeæ* has been in my garden for several years, and increases in favour as the small clump grows in size. Mr. Maw considered it an albino of *C. b. nubigenus*. It is difficult to conceive anything more fairy-like among the *Croci* than this little white flower, which is produced among a number of little, narrow,



FIG. 148.—*CHRYSANTHEMUM MAXIMUM* AT SUNNY HILL, LLANDUDNO. (SEE P. 458.)

grassy leaves. The flowers are small, of course, but they are exceedingly dainty. I think this little *Crocus* more suited to the alpine-garden than to the flower-border, where it would have to encounter rougher treatment than would fall to its lot in the quarters devoted to the choicer alpine flowers, to which it forms a suitable companion.

Gay's *C. Adami* is another form which I should like to possess, although I do not feel that it is so needful as the others. It comes from Tiflis and the Caucasus, and has a bluish-lilac flower, sometimes feathered. From Mr. Whittall I once received a form of *C. biflorus* closely resembling *C. Adami*.

The series would be completed by the possession of some of the white forms other than *Pestalozzeæ*. These are not, so far as one knows, obtainable under separate names.

These notes on *C. biflorus* are not inappropriate, inasmuch as there is still time to procure corms for blooming next spring, and because there was figured in the *Botanical Magazine* for October a *Crocus* named *C. Alexandri*, apparently a form of *C. biflorus*. This is a native of Servia and Bulgaria, and was first gathered by Skopil, at Dragalera, in 1892; introduced into cultivation by Mr. Max Leichtlin in 1899; and figured in the *Botanical Magazine* from plants which flowered at Kew in March, 1900. The plate shows that it is a variable plant, the prettiest forms having the outer segments flushed with lilac all over the back, others having only broad lilac stripes. The flowers flushed with lilac have a narrow white band round the outside

of the segments, the interiors being white. I have a *Crocus* under this name, but it has not yet bloomed with me. One hopes that the plate in the *Botanical Magazine* may induce some to grow more forms of the old *Crocus biflorus*. S. Arnott.

A MIDLAND GARDEN.

(Continued from p. 369.)

My garden, which is roughly triangular, is protected on two sides by one of the best hedges I have ever seen. It consists of a mixture of Hawthorn and Privet, and has been regularly cut, generally twice a year. It is now more than 7 feet high and 3 feet thick, quite uniform throughout the whole 200 yards, and without a single bare place along the bottom through which anything larger than a terrier could by any means creep. I should mention, however, that it was originally assisted by a fence of iron-hurdles along one half of it, and wooden posts and rails along the other. These are now completely buried in the centre of the hedge, and invisible; but they no doubt help to give it rigidity. I have also a small piece of Yew-hedge, planted at the same time, which is of the same height, not quite so thick, but equally sound. Probably a perfect Holly-hedge is really the best of all. Such hedges are sometimes seen, but they take a long time to grow. In the hedgerows of this county, although Hawthorn is the main constituent, we have a good deal of Blackthorn and a little Elm and Maple. Beech is not used here except in gardens and nurseries.

During a long life in this district, whenever I have had a garden I have always been ambitious to grow a Mulberry-tree. At the celebration of the tercentenary of Shakespeare's birth in April, 1864, I planted one with great ceremony, and tried my best to make it live. But it was too late in the year, and the miserable thing was resolved to die, as it did. Two years later I tried again in the same place. I forget what it was that went wrong this time, but the tree died as before. Ten years later my present garden was planted, and of course a Mulberry-tree was included. The terrible winters which followed destroyed my hopes once more. Still I persevered, and planted another on the lawn. For several years this one grew, and at last began to bear fruit, which, however, did not properly ripen. Then my fate found me out again. Some clumsy person using a mowing-machine on the lawn drove full tilt at the unfortunate tree, cut off a large piece of bark, and made a gash in the wood. It never recovered from the shock, but withered away, and had to be removed. I have given up planting Mulberry-trees. Yet I know of several large trees in old gardens about here, which bear fruit abundantly.

I have mentioned the strange plants which have occasionally turned up in this garden as "casuals." Among them was the round leaved Hare's Ear (*Bupleurum rotundifolium*), a common plant in chalky districts, but never seen in this county. It came up in the midst of a bed of *Myosotis dissitiflora*, which had been there for several years. There was only a single plant of it, and it has never appeared since. Another stranger which visited us in a similar manner on one occasion only was *Diplotaxis viminea*, a cruciferous weed of South Europe and the Channel Islands. It came up and flowered on a patch of bare ground, all by itself, without any apparent reason. A third instance of these odd appearances was another cruciferous weed, *Erysimum orientale*, a native of South Europe and Asia. Why Linnaeus, who gave it its name, should have considered it especially "oriental" I do not know, unless he got it from Japan, where it is said to be cultivated for its seeds. A near relative of the last, *Erysimum cheiranthoides*, appeared as a weed in this garden for the first time about fifteen years ago, but, unlike the others, it came to stay. It seems to have thoroughly established itself, scores of plants appearing every year in various parts of the garden.

I do not try to eradicate it, because it seems to have come in a friendly spirit, like a strange cat, and made it itself comfortable, and I rather like its bright yellow flowers. There is a kind of wild Poppy, *Papaver dubium*—not the one which grows in cornfields, though I like it, of which there are two forms not easily distinguished except by the colour of the sap. In one the sap is milky white, and this is the common form. In the other the sap is yellow, and the plant is said to be rare. They are distinguished in botanical books by the rather grotesque names of *Lamottei* and *Lecoqii*. The latter is the one with the yellow sap, and it suddenly appeared here in company with the common *Lamottei* some years ago, maintaining itself since from year to year.

It is not always easy to account for the appearance of these odd "casuals." Sometimes they come up in the midst of seeds which are known to have come from a distance. Frequently they are found in the neighbourhood of cornmills, and have no doubt been imported with foreign corn. In other

debated. It seems that no answer can be given, except that there is a natural tendency in the living protoplasm to give a circular motion to the stems, which when they meet with a support necessarily twine round it. This of course implies the existence in plants of something closely allied to instinct in animals. I have spoken of the minute plant *Riccia glauca* occurring in this garden, and of a remarkable story concerning a near relative of that plant. It was thus. The town of Leicester is supplied with water from two large reservoirs among the hills of Charnwood Forest, about 8 miles from the town. A few years ago we had several very dry summers in succession, and the water in both reservoirs became nearly exhausted. Extensive banks of mud which the water had formerly covered were now exposed to the sun and air, and in a few months these banks were covered with a beautiful green mosaic-work carpet formed of the fronds of *Riccia crystallina*, the largest of them scarcely the size of a sixpence, but in numbers quite uncountable—there must have been many millions

Such plants are scarcely fit for formal beds, being useful rather than decorative, but they may be put in rows in the rosary, between the standard Roses, or even in the kitchen or fruit garden. Armloads of their flowers can be cut for decorating rooms, the plants having the advantage that they produce an abundance of bloom, with long stems, that render them easy to arrange.

But these plants are best suited for growing around clumps of trees and shrubs in a pleasure-garden. In the turf that surrounds these clumps an irregular border should be cut, in which these perennials can be set at varying distances apart, some in groups, others isolated. The different species can be scattered without apparent order, and those can be grouped together that flower about the same time. If the colours are carefully selected, these floral arrangements are very successful, as all the blooms are at their best together, and this period can be timed to accord with the flowering of the shrubs about them.

If, for instance, the border of a clump displays legions of carmine-mauve flowers on the dark branches of the Judas Tree, the long golden racemes of the Laburnum, the dense trusses of the Lilacs, the pearly inflorescences of *Staphylea colchica*, the orange yellow balls of the Kerria, and the snowy racemes of the early *Spiræas* (*S. japonica prunifolia*, *S. argentea*), which should all be in beauty together in May; we may add, to complete the picture, Columbine, with their light bells; *Delilytra*, with clear carmine drops; *Centaurea montana*, *Trollius*, *Squills*, *Golden Alyssum*, white *Arabis*, *Lily of the Valley*, and many others.

In summer the Sumac, *Rhus Cotinus*, with its pale green cloud of flower-stalks (there is also a very handsome purple variety) which blends well with *Calycanthus*, and is effective against the white panicles of *Spiræa sorbifolia* and *S. Lindleyana*, while the purple clusters of *Hedysarum multijugum* mingle with the golden blooms of *Aquilegia chrysantha* and the white flower-heads of *Achillea ptarmica*. In the grass below shine the large gold corollas of the large-flowered *Hypericum*. Here and there the narrow-leaved *Thalictrum* will display its dense inflorescences which, lacking in bright petals, form a good foil to the gayer flowers.

In every arrangement of this sort it is advisable to introduce a few plants with finely-divided foliage that will soften harsh outlines and combinations of colours. The plant branches of *Asparagus verticillatus* (a hardy perennial) are always suitable and useful for this purpose. For each season of the year a corresponding arrangement can be contrived; while, at the end of the summer a final and grand autumnal group can be made up with many-coloured Hollyhocks, violet *Desmodiums*, golden Sunflowers, *Heleniums*, and *Solidagos*, and the pale blue and mauve of *Asters*; the whole to be here bordered and there lightly veiled with the errant sprays of white sweet-scented *Clematis*. The combinations that can be made are very numerous; or, on the other hand, matters can be so arranged by collecting flowers that open at different seasons that there is always something to be found in bloom. Gardens occupied for but limited times may include only such plants as will bloom during the stay of the owners.

It may be said that similar results can be obtained by bordering shrubs (as is so frequently done) with formal bands of bedding plants; but the latter arrangements are best suited to public parks, where a bold effect is required throughout the summer; or, perhaps, to large estates, where the formal bedding accords with the style of the establishment. But true plant lovers prefer to follow the maxim, "Have flowers for enjoyment, not for display." Again, it may be said that perennials do not bloom all the summer through. So much the better! The flowering and passing of the beauties of the perennial border is preferable to the unchanging glare of zonal *Pelargoniums*, and we love the uncertain and daily varying charms of our plantations, in spite of the opposition of popular prejudice. *Lucien C. Ballet, Troyes.*



FIG. 149.—THE RESIDENCE OF JOSEPH BROOME, ESQ., SUNNY HILL, LLANDUDNO. (SEE P. 458.)

cases they may have come in with foreign timber or skins. But there are many instances not thus explainable. Perhaps the most likely theory is that migratory birds bring the seeds either in mud adhering to their feet or in their dung.

One of the prettiest of British wild flowers, and one of the greatest nuisances in a garden, is the common little Bindweed, *Convolvulus arvensis*. Its creeping roots run all over the garden, and the little spires of leaves come up everywhere and twist round everything. It is useless to pull them up, the root is always left behind and fresh shoots very soon appear. To get rid of it when once introduced requires as much careful forking as if the ground were full of "twitch." *Sidalcea candida* is another plant worth growing for its pretty flowers, but soon becoming a nuisance by its creeping roots if not kept in check.

Among the creepers on this house there is a form of the common white Jasmine, which has twining stems. I have not seen it anywhere else, nor do I find it mentioned in books. It does not grow so vigorously nor flower so freely as the common form, but its stems twist themselves together like ropes. How the twining of a stem is produced, and why the twist is always in the same direction in the same species, are questions which have been much

of them. They died away in the winter, but appeared again in the summer for two more years, when the reservoirs became full once more, and the mud-banks have never been exposed since. The same phenomenon occurred at both reservoirs, although they lie 6 miles asunder, and what is more curious still, at one of the Birmingham reservoirs also, 30 miles away. But the greatest marvel of it lies in the fact that this little plant had never been seen in Leicestershire for at least fifty years, and never at all in Warwickshire. Where did all these millions come from in that sudden manner? If the spores were lying dormant in the mud, how did they get there? The banks of the brooks which feed the reservoirs have since been searched, but no trace of *Riccia* has been found. Transport by birds will not account for it. It remains an unsolved mystery. *F. T. Mott, Birstal Hill, Leicester.*

HERBACEOUS PERENNIALS.

By "perennials," I mean not merely ordinary cultivated species, but such as are found wild in fields, meadows, and forests; introduced into gardens, they frequently flourish well under careful treatment.

MUSA JAPONICA,

SYN. M. BASJOO.

THIS species is a native of the island of Yesso, in the neighbourhood of Hakodate. The island is the most northerly of the larger islands of Japan, and lies in the same latitude as Corsica, but possesses a very dissimilar climate. In England the plant would be quite hardy, but our summers are too cool, hence the cultivation of this species of Banana as a fruiting plant in the open air would not be advisable; although if grown in tubs in the autumn and winter out-of-doors, or planted out in beds at those seasons, and lifted and tubbed or potted in the early spring, and placed in a hothouse, fruits might be obtained with but little labour and expense. This species, like *M. paradisiaca*, which it resembles in habit, and *M. Cavendishi*, propagates itself from suckers. The leaves are more luxuriant than those of either, and almost equal in size to those of *M. Ensete*. The plant suffers more from wet than from cold, as owing to the heavy snowfall in Yesso, it is well protected from the latter. Even should the fruit not ripen in our climate, the plant makes so few claims on our attention at all seasons that it is deserving of cultivation as a "sub-tropical," being in that respect less exigent than *M. Ensete*.

The species was mentioned by Mr. J. H. Veitch in his travels in Japan, and was sent to this country by Mr. Maries, when collecting plants for Messrs. J. Veitch & Sons. A plant flowered in 1891 in the temperate-house at Kew. Our extensive commercial relations with Japan should render the introduction of this species of *Musa* in quantity an easy matter.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Dendrobiums.—Numerous species and varieties of this genus are now developing their flower-buds, and those which have reached a forward stage may be afforded rather more warmth, which will cause the flowers to develop more perfectly. *D. nobile* and its varieties will bear without injury an extremely low temperature, providing the plants and atmosphere be kept fairly dry; but at this season a temperature below 50° is prejudicial to the coming flowers. At the same time, the heat afforded the plants must not be much more than this. The plants should be discouraged from making any growth until the days are longer and lighter, and natural heat more abundant; therefore, do not afford water so long as the last-made pseudo-bulbs remain firm. If new growth has commenced, this need make no difference to the treatment recommended, for little or no root action occurs until the growths have made considerable headway. The above remarks apply to such as *D. Ainsworthii*, *D. Leechianum*, *D. splendissimum*, and other hybrids having affinity with *D. nobile*; also to such species as *D. crassinode*, *D. tortile*, *D. crepidatum*, *D. luteiflorum*, *D. primulinum*, &c. The "Hawthorn-scented" *D. aureum*, now in bloom, needs much warmer treatment than any of those named above, otherwise its culture should be similar. *D. Wardianum* usually makes new growth early in the winter, but more water must not be afforded it in consequence. A very light position, an even temperature of about 50°, and almost perfect dryness whilst the younger bulbs remain firm, are conditions that should obtain; but if the plants have failed to become thoroughly matured, this or any other treatment will not meet with success.

Laelia pumila, &c.—When the flowers have faded, the pseudo-bulbs of this species will have developed, and they should be encouraged to mature by placing the plants in a light position in an intermediate temperature, and restricting the supply of water to a very limited quantity. *L. p. Dayana*, having more slender pseudo-bulbs, should not be kept quite so dry, though water need only be afforded when there are signs that the pseudo-bulbs will shrivel. *L. Jongheana* requires similar treatment to *L. pumila*, but its season of growth is

not the same. As the plants are now growing, place them in the lightest position of an intermediate-house, and afford water, much or little, according to the stage the growths have reached.

The Season.—During the last six weeks the weather has been very mild and moist, and it has been a matter of considerable difficulty to preserve suitable atmospheric conditions in Orchid-houses. The best plan to adopt under such conditions is to have the hot-water pipes sufficiently warm to dispel superfluous moisture, at the same time admitting air in abundance. Watering and damping should be done grudgingly, as the majority of Orchids suffer less from drought than excessive dampness.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq., Trent Park, New Barnet.

Bush and Pyramid Plums.—Bushes afford an ornamental and convenient method of growing the Plum in the kitchen garden, and with the exception of the more tender varieties, they succeed if grown in this manner. The reason why many fail with the Plum as a bush or pyramid is through neglecting to check gross growth in the first three years after planting, or until such time as the bushes yield full crops of fruit. Therefore, if lifting is performed in the period named, the over-exuberant growth which Plums are prone to produce on soils of only moderate fertility is checked, and the desired effect attained. Regarding pruning, the bushes should be allowed to grow with a little more freedom than Apples and Pears; at the same time overcrowding must be avoided, or otherwise the fruit will be produced only towards the ends of the branches. Keep the branches well furnished with fruit spurs, and shorten back to four buds any shoots left too long at the summer pruning. As a rule the cut-back shoots form numerous fruit buds providing growth is kept under by root pruning or lifting. Close spurring leads to some loss of fruit buds, it is true; but as there are always plenty and to spare in well-managed bushes, this is of no consequence. Some few varieties produce weak spray in the centres if not closely looked after, Angelina Burdett being one of these. This kind of growth generally follows excessive fruiting, and shows the need of surface dressings in the winter and during growth. Thin out shoots in young trees, leaving a sufficient number to form the main branches and no more, tipping or shortening them as circumstances may demand.

Sweet Bush Cherries.—Only a few varieties succeed when trained in this manner, but if strict attention can be paid to summer pinching, such bushes fruit heavily. Pruning in their case is a light affair now, and consists of spurring back, where necessary, unduly lengthy spurs. When shortening leading and other shoots, which often have more fruit than wood buds, care should be taken to cut to a wood bud. The Black Bigarreau is slightly pendent when grown as a bush, and if space permit neither leaders or terminal shoots should be stopped for several seasons, and under this kind of treatment it fruits heavily.

Kentish and Morello Cherries.—The trees, once they are established, are usually left to shift for themselves, with the result that the growths become entangled and the produce is poor. A certain amount of thinning should, however, be carried out every winter. If leading shoots in the middle of the crown are suppressed, a dwarf habit of growth is induced, and the branches will droop all round and almost touch the ground. If allowed to grow unrestrained upwards, the lower branches perish in the course of time. Afford a top dressing of manure yearly to trees in bearing, and see that they do not suffer from a dry soil.

Training.—A certain amount of training is required in regard to young bushes and pyramids, otherwise the columnar style of growth ensues. This is readily accomplished by the aid of stout stakes and ties. The stakes, to the requisite number, should be driven into the soil round each tree some two or three yards distant from the stem, and fasten tarred twine with a loop to any branch that needs to be drawn away from the centre, and make it slope outwards and fasten it to the most convenient stakes. In the course of a few seasons these branches will become sufficiently rigid for the ties to be dispensed with. Place a separate stake for the support of leaders in the case of pyramids. The above mode of training is sufficient for all ordinary purposes. Shorten back the young wood after the branches are secured in position.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of PORTLAND, Welbeck Abbey, Workson.

Early Pot-Vines.—As soon as the Vines have broken well, raise the temperature to 60° at night, and 65° by day, and when leaves appear afford another rise of 5° by night and by day. Endeavour to change the air in theinery every morning, and close the house at mid-day. If the weather is dull raise the temperature to 70°, at which point air may be admitted in order to prevent the stagnation of the air. Vines should be tied to the trellis soon after they have broken. Disbud all weak and crowded growths betimes. Cease to syringe the Vines when the bunches begin to elongate, but maintain humidity by damping down several times daily, and loosen the surface of the fermenting materials occasionally to permit of a little ammonia being given off by it. Keep the soil moist without saturating it. When the shoots reach the length of 1 foot and the Vines are in health, more water may be applied.

Early Muscat Vines.—Theinery may now be closed, and fire-heat applied at once if ripe fruit be required about the middle of the month of June. A somewhat higher temperature may be allowed at starting than for the Black Hamburg, viz., at night, of 55°, and 60° to 65° by day during mild weather. Tie down the rods in a horizontal position, so as to cause them to break regularly. Syringe them twice a day, and damp the paths and borders occasionally on sunny days. The inside border, if not mulched, should be afforded a dressing of stable-dung and soot, and afterwards afford water if it be needed. Where the roots occupy in and outside borders, the latter should be covered with a bed of tree-leaves, which may remain till warm weather returns, when it may be reduced in bulk by degrees, and a mulch like that recommended for the inside border applied.

Late Vines.—It will be necessary to look over the late Grapes, frequently removing decayed and decaying berries. Muscats will need very careful treatment throughout this month and the next. If the bunches are shaded on the top with opaque paper, and a temperature of 48° to 50° be kept up, the Grapes will retain their freshness for a long period of time unimpaired. Vines partially cleared of the bunches may now have the remaining ones bottled, and put in the Grape-room. This being done, theinery may be thrown open—a great gain to the Vines. In vineries where the fruit has been hanging for any length of time, the borders are liable to lack water, especially the parts near the heating apparatus, and water should be afforded in quantity. Fruit of Gros Colmar and Lady Downe's Seedling which are to be kept till the latest date, should remain on the Vines for a month longer before bottling them; keeping theinery cool, and ventilating it whenever the weather is favourable for doing so, but close and dry on foggy and damp days.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Peas under Glass.—The cultivation of Peas under glass seems to be increasing, if we may judge by the number of varieties well suited to indoor cultivation sold by seedsmen. Those who sow Carter's Forcing, Chelsea Gem, American Wonder, and Sutton's Dwarf Defiance will not be disappointed of a crop if suitable treatment be afforded. What the mode of forcing is to be will greatly depend on the glass space at command, some gardeners preferring frames, others sowing in pots and removing to a cool house orinery where a temperature of from 40° to 45° can be kept up at night. With careful treatment, sowings made now will yield pods in quantity till out-of-doors Peas come into bearing. Frame cultivation demands that special attention be given to the preparation of the compost in which the Peas are to be grown. This should consist of a rich loam in which a small quantity of leaf mould and well rotted manure is incorporated. But the gardener must use judgment in making up the bed-soil; and he had better err on the side of having too much than too little space between the plants and the glass. The seed should be sown thinly, and the plants afforded much ventilation. If pot culture is preferred, the sowing should be made in 10-inch pots, using the same kind of compost. It is a mistake to make the soil too rich, as it does not conduce to sturdy growth, and feeding or stimulants may be applied at a later date when

most needed. Put plenty of crocks into the pots, and only partially fill them when sowing the seed, so that earthing may take place when the plants are 4 inches in height. A slight sprinkling of the soil every fourth day will suffice till the seeds germinate, and afterwards syringe them daily. A shelf in a well-ventilated house is best for the plants for the present.

Cold Frames.—There are many losses among plants that are wintered in cold frames in hard winter through careless ventilation. Sharp frosts followed by almost warm, sunny afternoons are not unusual, and the grower is at such times tempted to open the frames, and provided the plants are not frozen the treatment is right and reasonable; but if some of the leaves have been touched by frost do not expose the plants to the sun, nor give air, but keep them closed and heavily matted till the frost breaks up.

Parsnips.—There is a marked difference between field and garden-grown Parsnips, and the latter are not so palatable as the former till the end of February. As the roots of the garden Parsnips stand above the ground a good deal, prolonged frost causes discoloration, and it becomes advisable to lift a quarter of the roots and store them in sand in a cool cellar or in a corner between two walls, and put a small thickness of tree leaves over them. It is a good practice to lift the roots in alternate rows, and use the soil between the rows to protect the roots left in the ground.

Early Potatoes.—Place the tubers of early varieties to sprout, in readiness for planting next month, in pits, frames, and pots. Arrange them in boxes, the "eye" end uppermost, and sprinkle fine leaf soil among them. A pit or house having a warmth of 50° to 55° will suit them; and when nicely rooted, but before the roots go far or the shoots get $\frac{1}{2}$ an inch long, let them be planted. Only two, or at the most three sprouts, should be allowed on each set.

Jerusalem Artichokes.—The stems should be cut down, and the crop lifted by trenching the ground two spits deep, and the best tubers saved for consumption and the middle sizes for planting. Both lots may be pitted in the open.

Chinese Artichokes.—Although these little roots (Crosnes) are more palatable when left in the soil till required for use, I prefer to lift some of them—say, half the crop—and store them in sand.

THE FLOWER GARDEN.

By J. BENSOW, Gardener to the Earl of Ilchester, Abbotsbury Castle, Dorsetshire.

Planting Deciduous Hedges.—If the hedge is intended as a permanent feature in the neighbourhood of the flower-garden, the work should be carried out with thoroughness. There are a variety of purposes which a hedge may serve to fill: it may form a screen for an unsightly building; a shelter, the dividing line between gardens or parterres of dissimilar character, or merely for ornament; and in all cases the land should be trenched, its line being indicated with stout stakes. The width trenched may be about 5 feet. If the natural drainage is insufficient, a rubble drain may be laid along the middle at 4 feet in depth, and covered with heather, brushwood, or sods. A stiff soil is improved by a liberal addition of strawy manure, kitchen-garden refuse, &c. Whilst no frost occurs, turf, if any is found on the line of the proposed hedge, may be cut and rolled back, it will not suffer any harm if it thus remains for a week, and when the digging is finished it may be unrolled to within 6 inches of the new line of hedge. For immediate effect, plants three to four years old should be employed, and these should be planted in a double row at 8 to 10 inches apart. The following may be planted, viz., *Forsythia intermedia*, *Cytisus Scoparius* var. *Andreanus*, which could be mixed with *Forsythia suspensa*, *Weigela amabilis*, *hortensis*, and *Madame Van Houtte*, *Hibiscus syriacus* in variety, which should have the sunniest position; *Lilacs*, including the Persian, single, and double-flowered varieties; *Roses* Lord Penzance Briars, Turner's Crimson Rambler, and Reine Olga de Wurtemberg, *Gloire de Dijon*, &c.; these may be planted at 3 feet apart, and trained lengthways of the border, having as supports here and there standards of *Laburnums* or *Cratægus*. These *Roses* make quick progress if turned out of pots and tied securely to stakes the first year, until they reach the standards

assigned for their support. Other nice subjects for a hedge are the shrubby *Spireas*, as *S. canescens*, *S. Lindleyana*, *S. opulifolia*, and var. *aurea*, having as standards between them *Amygdalus persica atro-purpurea*, *Prunus Pissardi*, or *Cercis siliquastrum*.

Pretty Corners are easily made with a few plants of *Cotoneaster microphylla*, with *Jasminum nudiflorum* allowed to ramble amongst them. As the *Cotoneaster* is a rapid grower, rich mulches after the plants have become well rooted do good. *Muehlenbeckia complexa* is a good associate of the yellow *Jasmine*, and clings and climbs in the warmer parts of the south coast to the shortened dead leaves of the tall stems of *Dracena indivisa*.

Iries are mostly very hardy, and may be planted at the present time in the most exposed places, some of the species being decorative and suited for covering high fences, and planting in windy corners. Prepare the station by adding to the staple road-scrappings and well-rotted manure. These climbing kinds of strong growth make good progress when planted out from pots, cuttings taking a season to form root.

Lawns.—These should be brushed with birch-brooms in the morning, to scatter dirt thrown up by worms, and in the afternoon the turf should be rolled. Here grass has grown up to date. Mowing was, however, discontinued last week to allow a little covering, which is necessary where new lawns have been made, to protect the roots partially from frost. A coating of fine leaf-soil and a little soot will be found beneficial, giving the newly made portion a thorough coating, spreading it regularly by using a shovel.

Outside Frames containing *Calceolarias* and *Pelargoniums* should, if not already done, have the outside walls built up with some hot fermenting material, either horse-manure or leaves, to assist in keeping out the cold weather; building the same squarely to allow access to the lights, and covering the latter by mats, to exclude frost.

PLANTS UNDER GLASS.

By T. EDWARDS, Plant Foreman, Royal Gardens, Frogmore.

Caladiums and other tubers should now be examined, if there is any risk of their perishing from excessive dryness, or, on the contrary, from drip. *C. minus*, *C. erubescens*, *C. argyrites*, and delicate varieties may be shaken out and started forthwith in pans or boxes, in a compost of peat and leaf-mould, or cocoa-fibre refuse and sand, planting them thickly. If a sufficient number of plants exist, some of the strong-growing varieties may be started in 5 and 6-inch pots, using equal parts of loam and peat, together with much sharp sand and finely broken up charcoal. Plunge the pots in a bed having brisk bottom-heat. For employment as table plants, *C. Chelsoni*, pink and green foliage, and *C. candidum*, white, are very useful, the plants being well furnished with leaves down to the pot. Tepid water should be afforded after potting, and afterwards water should be applied very sparingly until the leaves begin to develop.

Gloxinias showing signs of a renewal of growth should now be potted in a similar sort of compost, with some dried cow-dung added, and early in the new year the general stock of tubers should be potted, which is better practice than potting later, and hurrying the plants into bloom.

The Stove.—Apply manure-water to *Euphorbias* (*Poinsettias*), but apply less water to those that are past flowering. The stronger old plants only should be retained for propagation, and such should be placed in a light position to ripen the wood; gradually reduce the quantity of water afforded, and allow the foliage to die off naturally, and when leafless lay them on their sides until wanted for propagating purposes.

Forcing-houses.—Bring in bulbs in quantity, so as to fill the gaps that will occur when the late *Chrysanthemums* pass out of flower; bring in also *Richardias*, *Indian Azaleas* (especially *Deutsche Perle*), *Lilacs*, *Staphyleas*, *Deutzias*, *Ghent* and *Mollis Azaleas*. Apply the syringe thrice or more often daily. *Spirea confusa* and *S. Thunbergi*, and early-flowering *Rhododendrons* will start readily in a glass-house that is unheated.

The Greenhouse.—Afford *Bouvardias* as they go out of flower less water, but do not let the soil become too dry. Plants intended to furnish shoots fit for cuttings should be cut back hard, and be

then placed in a warm house. The young shoots, when 2 inches long, may be taken off with a heel, and struck in pots of sandy soil surfaced with sand.

Cyclamens.—Seedlings should be pricked off at 2 inches apart in pans or boxes filled with light sandy soil, and after affording water with a fine-rose water-can, keep them on shelves close up to the glass; a night temperature of 50° to 55° is quite high enough at this stage.

Cape Pelargoniums.—In mild weather, ventilate the house night and day. Autumn-struck plants growing in 60's should be stopped and allowed to break before repotting them in 48's, in which size they may flower. Fumigate or vaporize the house about once a month.

Fuchsias.—Pot off autumn-rooted plants, an encourage growth during the winter by placing them on shelves in a stove or other warm house where the night temperature is kept at from 58 to 60°.

THE APIARY.

By EXPERT.

Honey Markets.—Having submitted his samples, and the order secured, the next duty of every bee-keeper is, when the goods are to be sent to a strange firm, to secure references and inquire whether they are really genuine or not, as in many cases a little better price than the ordinary price will be offered on purpose to secure the goods; and when you apply for a cheque you receive your letter back, marked "not known." There is at the present time a good deal of this going on, particularly in large towns; and it is impossible to trace them, because the assumed firm is at once altered into another one, and the address changed. Several cottagers who have stored their honey to sell in one lot, either to pay their rent at Michaelmas or for a little store at Christmas, have told me that they have lost the whole. This is cruel, considering what it means to them. None of us want to go to the trouble of raising honey, storing the same, packing, &c., and then lose the whole; but to the class mentioned it is particularly hard, and therefore to them especially I say, never send away your goods before you have thoroughly satisfied yourself that your cheque will come back in due course.

Stores.—All sections in stock should be looked to. At this time of the year they soon get candied and sweat, and are soon rendered unsaleable. Nothing looks worse to see sections, nicely glazed, in shop windows that are sweating. One cannot expect people to buy them for the breakfast or tea table. It should be always borne in mind that for ordinary use run honey takes the first place.

Glazing section.—A very simple plan is to have a white piece of paper cut out at the printer's that will just go round the section, and wide enough to cover the whole of the top, bottom, and sides, and allowing a small portion to come over the glass each side—five-eighths of an inch will be quite sufficient. Lay your paper on a board, with a pencil mark, to show you at a glance where the paper should go. Have your paste at hand, turn your section upside down, after the paper has been wetted, draw over each side, then fix the glass at one time, and turn down the corners, and your section is ready. After this, allow the same to dry for an hour or so before packing; the sections, as soon as they are glazed should at once be turned up the proper way, or you will find any cell that has not been completely finished will run down the glass and spoil the look of it at once.

Flowers for Bees.—All bee-keepers should now have plants put in, not only for the beauty of the garden but to enable the bees to get a little pollen, &c., in the spring, such as *Wallflowers*, *Canterbury Bells*, and bulbs; a small outlay in this way helps the little busy bee at the time when it is sorely needed.

AN Apple a day
Sends the doctor away.
Apple in the morning,
Doctor's warning.
Roast Apple at night,
Starved the doctor outright.
Eat an Apple going to bed,
Knock the doctor on the head.

(Canadian Horticulturist.)

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—38.1°.

ACTUAL TEMPERATURES:—

LONDON.—December 19 (6 P.M.): Max. 52°; Min. 40°.

December 20—Dull, slight rain, mild.

PROVINCES.—December 19 (6 P.M.): Max. 51°, South-west Counties; Min., 41°, North-east Scotland.

THE last Christmas of the century 1801–1900. suggests a comparison between the dessert-table a hundred years ago and the supplies that are furnished to us at the present day. Our grandfathers and great-grandfathers had their Apples and Pears, their Almonds and Raisins, their Figs, and the rich glow of the Orange was not wanting from their tables. Grapes must have been the luxury of the rich, for few were grown. Pine-apples, so called because they are neither Pines nor Apples, nor yet a combination of both! were the exclusive possession of the wealthy.

At the close of the century, Grapes are so abundant and so inexpensive, that they can be seen on the tables of all but the very poor. The price cited in our last market report was 1s. 6d. to 4s. per lb. Still more astonishing is the abundance and low price of Pine-apples. At the beginning of the century no one could have dreamed of seeing Pine-apples on the barrow of the coster-monger. Now the cultivation of this fruit in this country is well-nigh abandoned, so large are the importations from the Azore Islands, and so excellent the quality.

Bananas were scarcely known except in picture-books. Now the importations from the Canary Islands and elsewhere are enormous. Steam communication with the Canaries, Madeira, the Azores, and the West Indies, of course, did not exist in those days, but it is to its rapid development in later times, and especially in the latter half of the century, that we owe the profusion and variety of fruits and other edibles which crowd our markets.

A walk through Covent Garden market at this season is very attractive to those who are interested in plants and their products. It is not only the fine samples of well-known fruits that excite attention, but also, and to a greater degree, the comparatively rare or "out of the way" productions. For instance, there is the Chow-Chow or Chayote, a kind of Gourd which botanists know as *Sechium edule*. It is cooked in the same way as Vegetable-Marrow, to which, to our fancy, it is superior. Though

a Cucurbit, it has but one seed, offering in this particular a great contrast to its close ally the Melon or Cucumber. Another peculiarity is that the seed, or rather the embryo within the seed, very often begins to germinate while still within the fruit (see fig. 145, p. 450). The thick fleshy rind of the fruit contains abundance of water and other nutriment for the embryo plant, so that it is for a time independent of any supplies from the soil.

Then there is the "Grape-Fruit," a name which, so far as we know, is a modern market coinage, for we do not find it in any book to which we have access, and neither Dr. BONAVIA nor Sir GEORGE BIRDWOOD is able to trace it. What is sold in the market under this name now is a small "Pommelo"—a globular fruit about the size of one's fist, and clearly a Citrus of some kind. The Shaddock, Citrus Decumana, was introduced into the West Indies by Captain Shaddock, hence its name. There are varieties (says SMITH in his *Dictionary of Popular Names of Economic Plants*), which produce fruits of various sizes, some measuring nearly 2 feet in circumference. . . . The large ones are known by the name of Pommelós, and the smaller ones are sold in the shops as Forbidden Fruit. The history of the Pommelo in India is given at length in Dr. BONAVIA'S *Cultivated Oranges and Lemons, &c., of India and Ceylon* (1890), p. 30. He concludes that the variety or species originated in the Malay Archipelago. SEEMANN found it wild in Fiji. BRETSCHNEIDER, *History of European Discoveries in China* (1898), p. 443, says "that it is cultivated near Fu Chu Fu, and that Amoy is famed for its Pumeloes." HEMSLEY, "Enumeration of all the plants known from China, &c." (*Jour. Linn. Soc.*, xxiii., p. 111), says "there is little doubt that some, if not all, the species [of Citrus] here enumerated are really natives." FRANCHET and SAVATIER—*Enum. Plant. Japon.*, i. (1875), p. 74, mention several species, including *C. Decumana* as cultivated in Japan. Of the Pommelo itself, Dr. BONAVIA speaks in another column.

Better known perhaps is the Litchée (*Nephelium Litchi*), a Chinese fruit of the size of a Walnut, with a red, tuberculate, brittle shell enclosing a sweet, gelatinous pulp "of an excellent gallant taste," as is asserted by the translator of MARTIN DE HERRADA'S work (1585). The plant grows wild in Hong Kong and the neighbouring mainland, and is largely cultivated in China and in India. It is said to have been introduced to Kew in 1786, by no less a personage than WARREN HASTINGS.

The Kaki, *Diospyros kaki*, is now imported in considerable quantities. It is a globular fruit, the size of a medium-sized Apple, with a gloriously tinted orange rind. Let not the unwary essay to eat this fruit till it is thoroughly blotted. If he neglect this precaution, he will pronounce it to be a fit companion for the bitter Apple, whatever that may be; but if he wait till the fruit is more than ripe, then he will pronounce it delicious. Mr. G. F. WILSON used to cultivate this tree in his orchard-house at Weybridge; and Canon ELLACOMBE succeeds in fruiting the plant against a wall in his garden of delights at Bitton.

The "Avocado Pear" is no Pear, but the fruit of a Laurel, *Persea gratissima*, a native of the West Indies. The fruit is Pear-shaped, with a marrow-like pulp, usually eaten with pepper and salt.

The Custard-Apples, again, are no Apples, but the fruit of various species of *Anona*, growing in the West Indies and other tropical countries.

Mangos are also to be seen, and when the rapid service of fruit-boats between the West Indies and the mother country is inaugurated, we may expect to get this fruit in better condition than it often is now.

Blanched Chicory, French Beans, Globe Artichokes, forced Asparagus, may all be seen in the market; together with Chrysanthemums, *Lilium longiflorum*, Begonia "Gloire de Lorraine," and numerous other flowers, which were unknown at the beginning of the century. Altogether, we of the fast waning century are better off than those who witnessed its inception. May we be correspondingly grateful.

* * OUR ALMANAC.—According to our usual practice we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1901. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical, and allied Societies, or any of our correspondents, will send us immediate intimation of all fixtures for the coming year.

SUNNY HILL, LLANDUDNO (see Supplementary Illustration, and figures on pp. 454 and 455).—The name of Mr. JOSEPH BROOME has a pleasant sound for horticulturists, who have long had reason to hold its possessor in the highest esteem. The illustrations which we give in the present issue, show the pleasant retreat Mr. BROOME has made for himself in the mild climate of Llandudno. Our supplementary illustration shows a fine bush of Crimson Rambler, flanked by *Chrysanthemum serotinum*, and similar plants. Hardy herbaceous plants, Alpine plants, and Orchids, constitute Mr. BROOME'S chief favourites, though nothing in the way of a good garden plant, or a florist's flower, comes amiss to Mr. BROOME. A detailed account of this garden is given in our number for June 23 of the present year. Although the climate is generally mild, the gardens are exposed to high winds, on which account they are divided into compartments by intervening hedges which afford the necessary shelter. Each compartment forms as it were a separate garden, the contents and arrangement being different in each. Mr. AXTELL has charge of this establishment, and in spite of its varied contents, maintains the whole in a high state of efficiency and beauty.

LINNEAN SOCIETY.—The last meeting of the Society was held on Thursday, December 20, at 8 P.M., when the following papers were read:—Mr. ARNOLD T. WATSON, F.L.S., "On the Structure and Habits of the *Ammodendron*;" Mr. I. H. BURKILL, M.A., F.L.S., "The Flora of Vavau, one of the Tonga Islands;" Prof. POULTON, M.A., F.R.S., "On Warning Colours in Insects." Exhibitions—Dr. J. W. CORNWALL, F.L.S., two photographs of a composite flower which appeared on a white Foxglove growing in a garden near Godalming; Mr. B. DAYDON JACKSON, Sec.L.S., two editions of Hill's *Flora Britannica*, with a note on the species of Statics included in them.

"THE GARDEN ANNUAL."—This useful periodical is published at 37, Southampton Street, Strand, London. In addition to the usual calendrical and miscellaneous matters, it contains lists of garden establishments, with the names of their proprietors, and their gardeners.

"AMATEUR GARDENING."—Among the articles in the Christmas number of this useful publication is one entitled, "In Africa's Sunny Gardens," by Mr. H. G. BOURNE. It is interesting as giving in short compass, a good idea of the climate and vegetation of Cape Colony and Natal. Other articles range from grave to gay, and the illustrations are numerous and varied.

"GARDENERS' MAGAZINE."—The Christmas number contains a number of interesting and

valuable articles. Mr. SHEA descants upon the marvels of the telephotographic lens, and gives illustrations of its power. Mr. GEORGE NICHOLSON has a delightful article on the Austrian Alps. Mr. GORDON contributes an appreciative article on THOMAS ANDREW KNIGHT; Mr. DRURY tells us of the Azore Islands. Indeed, the whole number is bright and attractive, and above the average of such productions.

PEAR DOUBLE DE GUERRE.—Mr. MILLS, of the Gardens, Combe House, Croydon, sends us a sample of this culinary Pear. It is of medium size, regularly pear-shaped, elegant, tapering to the stalk, with a shallow eye, and an olive-green skin speckled with russet. The flavour is delicate, and the colour pleasing.

SANDWICH AND DISTRICT MARKET GROWERS' ASSOCIATION.—A meeting of market growers was held at Ash recently, at which the above Association was formed, and the following committee elected:—Chairman, Mr. C. HERBERT, Ash; Treasurer, Mr. F. C. HEMING, London & County Bank, Sandwich; Hon. Sec., Mr. FRED. F. COLEMAN, Sandwich; and Messrs. W. FAGO, to represent Ash; F. W. QUELCH, Wingham; J. CASPELL, Easby; G. CASPELL, Sandwich; T. FARRIER, Worth; T. CORNES, Woodnesborough; H. CASTLE, Stourmouth; J. DRAYSON, Preston; and W. D. BAYLEY, Staple. The committee have since met and formulated a workable scheme, which will be a real benefit to the members of the Association. The committee will present a report to the next general meeting, which will be held at "The Lion," Ash, early in January. To fully carry out the committee's recommendations, it is necessary to have the united support of the whole district. The subscription is only 2s. 6d., and may be paid to either the Treasurer at the London & County Bank, Sandwich, or to the Hon. Sec. The committee have decided to extend the district to include growers from Deal, Ramsgate, Margate, Minster, Adisham, &c., and it is proposed that when these districts send members they shall be represented on the committee. A resolution to this effect will be presented at the next general meeting, the exact date of which will be duly advertised in the *Kentish Express* and *Sandwich Mercury*, and notified to all members. Any one interested in market growing and willing to lecture or communicate papers on subjects of general interest, is requested to communicate with the Secretary. Members of the Association can, through the Secretary, submit samples of fertilisers and artificial manures for expert examination, and obtain full reports on the same at very low charges. Further particulars as to this may be obtained on application to the Secretary. The Secretary will be pleased to give at all times any information and assistance in his power to any of the members on matters of interest to market growers, and he will, through the medium of several scientific friends, be glad to report on the nature of any diseased, abnormal or curious specimens of plants, &c., which any of the members may submit to his notice. *Fred. F. Coleman, Hon. Sec.*

NURSERYMEN'S TRAVELLERS IN RUSSIA.—From January 1, 1901 (14th, old style), the territorial trade tax on German travellers will be reduced from 500 roubles as heretofore, to 150 roubles.

THE RIVIERA AND ITALY.—At Christmas, and during the winter generally, the thoughts of many persons in this, our much-abused climate, turn longingly to the sunny South. In a pamphlet before us we see how the Riviera and Italy are not now exclusively for the wealthy, but open to all who can expend a ten-pound note on the journey. "To be exact, the cost is ten pounds and fourpence, first-class—a modest sum, surely, for it allows sixty days of blue sky and sunshine by the Mediterranean. It is a circular ticket from London and back, arranged by the Brighton Railway Company, covering the famous French and Italian coast-line from Marseilles to Genoa. And it is but one of a

series of Riviera and Italian trips," of which full particulars and fascinating illustrated and descriptive time-tables can be procured from the Continental Traffic Manager, London, Brighton, & South Coast Railway Company, London Bridge Terminus, S.E.

VERIFY YOUR REFERENCES.—No one doubts the propriety of doing this, but when one lives on the other side of the world, where libraries are not available, some laxity in this particular may be excused. In a Colonial report before us, the writer says:—"It is related that Queen Adelaide, wife of George II. wished to enclose St. James' Park as a palace garden, and asked Walpole what it would cost. 'Only three crowns, your Majesty,' replied the astute Minister"—a variant of an oft-told story.

THE SURVEYORS' INSTITUTION.—The next Ordinary General Meeting will be held in the Lecture Hall of the Institution, on Monday, January 14, 1901, when the adjourned Discussion on the Paper read by Mr. R. E. MIDDLETON (Fellow), at the last Meeting, entitled "The Future of the London Water Supply," will be resumed. The Chair will be taken at 8 o'clock. The Institution will be closed from Friday evening, the 21st inst., to Friday morning, the 28th inst.

SEEDLESS ORANGES.—The first seedless Orange-trees were apparently freaks of Nature. Their counterparts have never been found. In the summer of 1872 WILLIAM F. JUDSON, United States Consul at Bahia, Brazil, heard an account from natives of a few trees in the swamps on the north bank of the Amazon, some sixty miles inland, that bore Oranges without seeds. He had heard of the starting of Orange-groves in Florida, and he believed that seedless Orange-trees were well worth experimenting with there. So he sent a native up the river to cut some shoots of the trees and get some of the fruit. When the native returned, the Consul was delighted with the specimens. Forthwith he sent six of the Orange-tree shoots, carefully packed in wet moss and clay, to the Agricultural Department at Washington for propagation. The trees did not excite as much attention in the Department as the enthusiastic Consul had expected. Two of the shoots, which were no bigger than horse-whips, died from lack of care in the Department grounds, and the others were almost forgotten in a few months. In the winter of 1873, Mrs. HORATIO TIBBETTS, who was collecting specimens of fruits and shrubs suitable for experimental propagation in southern California, among other things got from the Department grounds the four surviving Orange-tree shoots from Brazil. The trees reached Mr. TIBBETTS safely at Riversdale, Cal., a week later, and were immediately planted. That was in December, 1873. Two of the shoots died from neglect, and another was broken and chewed up by a cow. Five years passed, and the two surviving trees came into bearing. In the winter of 1878-9 they bore sixteen Oranges. The specimens were carried about southern California and shown to all ranchmen and fruit-growers. There were many who doubted whether the trees would annually bear such royal specimens of Orange culture. Nearly every one believed that the fruit would become coarse and tough in a few years more. So the second crop was awaited with curiosity among the neighbours. There was about a box of Oranges in the second yield, and they were even better than those of the first crop. The planting of groves of seedless Orange-trees propagated from buds from the two original trees on the TIBBETTS' place began in earnest throughout southern California in the winter of 1882. . . . A year or two after the Orange-trees that had been propagated from the TIBBETTS' trees began to bear, and they themselves furnished tens of thousands of navel buds as good as those from the two original trees. Then the first navel Orange-groves began to bear fruit, and from that time the boom in navel Orange-groves has continued. *New York Sun and Agricultural Journal, Cape of Good Hope.*

NATIONAL AURICULA AND PRIMULA SOCIETY.—The annual meeting will be held at the Horticultural Club, Hotel Windsor, Victoria Street, on Saturday, December 22, at 4 P.M.

The annual meeting of the NATIONAL CARNATION SOCIETY will be held on the same day, at the same place, at 5.15 P.M.

BELCEUIL CASTLE.—The destruction by fire of this famous château near Mons, together with many of its priceless works of art and the valuable library, is announced. It was the seat of the Prince de LIGNE. The grounds were laid out by LE NOTRE and the late M. ED. PYNART, who was in his early years a member of the garden staff.

THE NEW PRESIDENT OF THE SOCIETY OF ENGINEERS.—We learn that Mr. CHARLES MASON, director of the firm of FOSTER & PEARSON, horticultural builders, Beeston, Nottingham, has been elected President of the Society of Engineers, London, for the ensuing year.

THE NATIONAL AMATEUR GARDENERS' ASSOCIATION, which was established some ten years ago, for the encouragement of horticulture among residents in suburban districts, and other amateurs possessing gardens of more or less limited extent, held its annual dinner at the Holborn Restaurant on the 13th inst. The Chair was taken by Mr. T. W. SANDERS, President of the Association; supported by Messrs. H. T. WOODERSON (Treasurer), D. B. CRANE (Deputy-Chairman), U. STACY-MARKS (Secretary), BRIAN WYNNE, R. HOOPER PEARSON, and about ninety other ladies and gentlemen. The Association has grown much during its first ten years' existence—the membership now approaches 1,000, and there are several societies affiliated to it. Exhibitions and meetings are held frequently at Winchester House, Old Broad Street, London, and at each meeting a lecture is delivered upon some horticultural subject. It is remarkable that so much work has been done upon an annual membership subscription of half-a-crown, and the President's suggestion that at the next annual meeting, steps should be taken to raise the subscription to five shillings a year, should meet with a hearty response. In proposing the toast of the evening, Mr. SANDERS, in giving a *résumé* of what work the Society had already done, advanced very good reasons for greater activity upon a larger scale. In the absence of Mr. T. G. SWALES, the toast was responded to by Mr. GINGELL. An interesting feature of the evening's proceedings was the presentation of the championship and other trophies, silver plate, and other special prizes that had been won at the Association's exhibitions. Some of these fortunate gentlemen were Messrs. E. F. WICKS, D. B. CRANE, HOBDAV, G. W. COOK, W. E. REED, LEE (Gosport), NEEDS, &c. The donors were toasted by Mr. D. B. CRANE, and they included Messrs. H. CANNELL & SONS, SUTTON & SONS (Reading), H. J. JONES (Lewisham), FIDLER & SONS (Reading), NORMAN DAVIES (Framfield), ALLNUT (Woking), CARTER, PAGE & Co., FRANK CANT & Co., DOBBIE & Co., &c. The toast of the officers was proposed by Mr. B. WYNNE, who strongly recommended that the amount of the annual subscription be doubled. A few words in reply were made by the Treasurer and the Secretary. The toast of "the Press" was responded to by representatives of the Central News Agency, and of the *Gardeners' Chronicle*.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Rt. Hon. Lord LLANGATTOCK has consented to preside at the sixty-second anniversary festival dinner of this Institution at the Whitehall Rooms, Hôtel Métropole, on Wednesday, May 22, 1901.

"QUICK FRUIT CULTURE."—We have received for review a copy of Mr. SIMPSON'S book, with the above title. It is a revised and extended edition of the earlier work on *Pruning and Training*, and like it, deserves attentive consideration. We shall shortly revert to this work, which is published by PAWSON & BRAILSFORD of Sheffield.

M. ED. ANDRÉ, M. CH. BALTET.—The English colleagues of these two gentlemen will join heartily in the congratulations bestowed on these eminent horticulturist on the occasion of their promotion to the grade of Officer of the Legion of Honour.

SWISS NATIONAL CHRYSANTHEMUM SOCIETY.—Like all the continental Chrysanthemum societies, this newly founded one, whose headquarters are at Geneva, has issued a journal. The title is *Le Soleil d'Automne*, and although less pretentious than some of the others, there are several interesting short articles in No. 2, which has just come to hand. **M. CH. ALBERT**, a fertile and ready writer, and speaker at all the Chrysanthemum gatherings on the continent; and **M. ANATOLE CORDONNIER**, are contributors.

EDWARD PYNAERT.—The December number of the *Revue de l'Horticulture Belge* contains the full text of the orations delivered on the occasion of the funeral of our much lamented colleague. They comprise discourses from the President of the Tribunal of Commerce, the Director of the State School of Horticulture, **M. RODIGAS**; of the President of the Royal Society of Agriculture and Botany, **Count de KERCHOVE DE DENTERGHEM**; the Vice-President of the Cercle d'Arboriculture, **M. BURVENICH**; the Vice-President of the Chambre Syndicale des Horticulteurs Belges, **M. ARTHUR DE SMET**; the President of the Union Commerciale des Horticulteurs, and first Vice-President of the National Society of Horticulture of France, **M. TRUFFAUT**; the President of the Association des Anciens Elèves de l'Ecole d'Horticulture de Gand, **M. BUYSENS**; lastly, a discourse in Flemish, by the foreman of **M. PYNAERT'S** establishment. All these addresses bear testimony to the qualities of **PYNAERT** in his public and in his private capacity. It is interesting to observe the uniformity of these character-sketches prepared by men of different stations and position, and even of different nationality, and it is satisfactory to witness the appreciation of **PYNAERT'S** disinterested labours on behalf of horticulture, and of his frank, straightforward, generous character.

TRADE POISONS BILL.—A meeting of the Chemical Trade Section of the London Chamber of Commerce was held recently to consider the above Bill, which has been formulated by the Traders in Poisons and Poisonous Compounds for Technical and Trade Purposes Protection Society, of 5, Clements Inn, London, W.C. The Bill has for its objects the alteration and amendment of the law relating to the sale of poisons and poisonous compounds for agricultural and other trade purposes in Great Britain and Ireland, and to decide what action, if any, should be taken by the Chemical Trade Section in the matter. The following resolution was proposed by **Mr. THOMAS BENNETT** (Messrs. BENNETT, LAWES & CO., LTD.), and seconded by **Mr. J. J. BOWLEY** (Messrs. F. BOWLEY & SONS):—"The Chemical Trade Section recommend the Council of the Chamber of Commerce to actively support in Parliament the proposed Bill to alter and amend the law relating to the sale of poisons and poisonous compounds used for agricultural and other trade purposes." The resolution was carried.

STREPTOCARPUS.—Our successors in the coming century will have to give their predecessors credit for putting their evolutionary theories into practice. We have before us in these dark days before Christmas a box of *Streptocarpus* flowers from Messrs. **JAMES VEITCH & SONS**, which are a wonderful advance on what was known even five years ago. The colours are violet of various shades, purple, red of various tints, one pure red, and white. In many cases the throat is marked with lilac stripes, which add to the effectiveness of the flower. Altogether it is a remarkable box of flowers for the Christmas season.

THE GLASTONBURY HAWTHORN (CRATÆGUS OXYACANTHA VAR. PRÆCOX).—This precocious Hawthorn is now in bud and blossom in the University Botanical Gardens, Pembroke Road,

Dublin. It is a peculiarly late, or early-flowering variety of the common Maybush, or Hawthorn-tree, blooming in December or in January. It seems first to have become popular in England on account of an old tree that existed on Weary-all-Hill, nigh unto Glastonbury Abbey, in Somersetshire. This old tree had two trunks, one of which was destroyed by the fanatics in the time of Queen ELIZABETH, and the other shared the same fate during the great rebellion. Those interested may find the above and other particulars of this variety of the Hawthorn in *British Forest Trees*, by the Rev. C. A. JOHNS (S.P.C.K., 1847), pp. 184–190. The tradition is that the original stock came as a walking staff in the hand of JOSEPH of Arimathea,

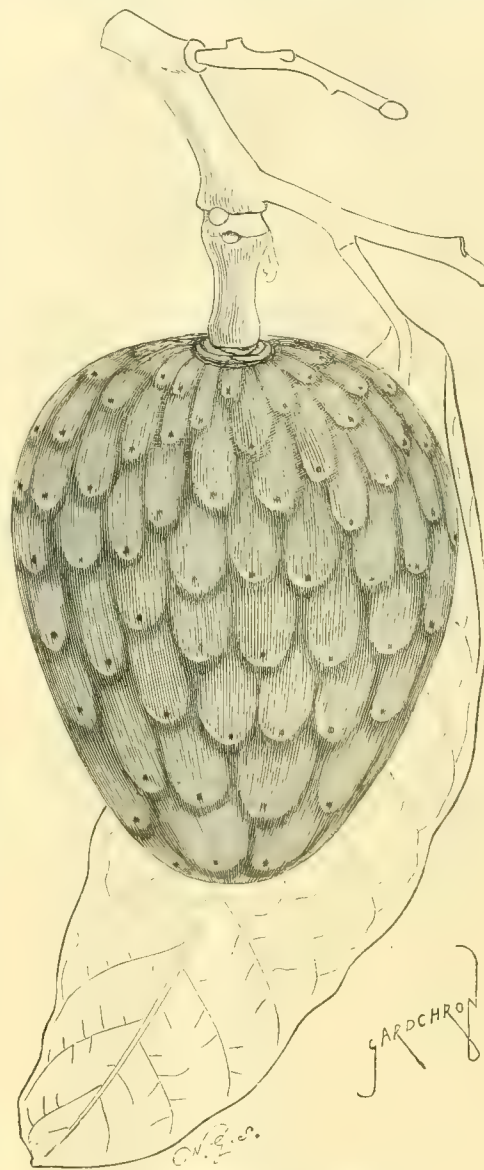


FIG. 150.—ANONA CHERIMOLLA. (SEE P. 449.)

who, landing in the then Island of Avalon, fixed his staff in the ground and fell asleep. When he awoke, the rod, like AARON'S, had budded and taken root; so he concluded that as the use of his trusty staff had been thus taken from him, that it was ordained that he should begin his work at that place. He accordingly built there the little oratory or chapel, which subsequently grew into the wonderful Abbey of Glastonbury, one of the most magnificent in Britain. GILPIN, in his quaint *Observations on the Western Parts of England*, gives an account of his visit to the Abbey there, and says of the rustic custodian, that he was remarkable for his zealous knowledge and piety. Every stone was sacred to him, every legend and tradition true, but he adds above all the appendages of Glastonbury, he revered most the famous

Thorn which sprang from St. JOSEPH'S staff, and blossoms at Christmastide. The actual tree GILPIN saw, however, was not the original one, but doubtless a lineal descendant [and of which a flowering shoot is kindly sent us by a correspondent. ED.], of which a stock is still maintained. This legend, old as it is, was doubtless a survival of the still more ancient reverence in which the Hawthorn-tree has been held in Northern Europe and Africa. The Hawthorn groves in the Phoenix Park, at Dublin, are to-day the only remains of an ancient forest, frequently alluded to in the *Annals of Ireland*, and nowhere else in Europe are there so many and such fine old specimens on so limited an area. Mr. JOHNS says, "In Ireland to the present day it is a popular belief that no one will thrive after rooting up an old Thorn." The tree has from time immemorial been held in the highest reverence; and by the same token, we trust, the beautiful old Hawthorn groves in our national park may be carefully fostered and preserved. Seeing that of all the trees in the Phoenix Park, the historic Hawthorns are the most remarkable, it might well be suggested to those in authority, how much their beauty and interest might be augmented or extended by adding groups of all the other known hardy species of *Cratægus* from temperate countries. There are many noble species and varieties of *Cratægus* to be seen in the cemeteries at Glasnevin, and at Mount Jerome, as also in the Botanical Gardens at Glasnevin, and elsewhere around Dublin; and the best of these would undoubtedly thrive splendidly in a soil and climate that suits our native species so well. In any case, a bold group of the variety "præcox," now in bloom, would afford much interest to both residents as well as visitors, as flowering at this dull time of the year. *White Thorn*. [We have received specimens from the Botanic Gardens, Bath, through the courtesy of Messrs. COOLING. ED.]

ALMONDS.—These nuts have advanced 50 per cent. in price owing to the Sicilian crop this year being only about 25,000 packages, compared with 75,000 packages last year—which is about the average for the preceding years. At Bari, on the mainland, the production has decreased from 100,000 packages last year, to 15,000 in the present year. Large quantities are destitute of kernels, and it is estimated that from this cause alone, there will be a loss of 10 per cent. on the crop gathered. The exceedingly high price is maintained; a slight fall was occasioned a short time since by the arrival at Catania, of 500 packages of Almonds from Morocco, but the decline in prices was but temporary.

RECIPE FOR QUINCE CONSERVE.—Dr. BONAVIA sends us the following recipe, which will be appreciated by many of our readers:—Boil the fruit cut in small pieces in enough water to cover the bottom of the pan—properly speaking, the process is steaming the Quince chips. When quite soft, rub them through a wire sieve, then weigh the pulp, and add the same quantity of sugar as fruit, and boil the whole again until the conserve sets, when put on a cold plate. Then pour it on a greased baking-tin, and bake it in a hot oven until it becomes firm enough to cut into small squares. For trade purposes, it can be put in jam-pots, made air-tight in the usual way.

"SYLVANA'S LETTERS TO AN UNKNOWN FRIEND," by E. V. B. (MACMILLAN & CO.).—Another of those pleasant, imaginative, but suggestive volumes which E. V. B. has taught us to expect when she puts pen to paper. The title is rather a contradiction in terms, but that is a matter of little consequence, especially at the Christmas season. The nature of the book may be illustrated by the following extract, which reveals the true gardener:—"To steal out with basket and trowel at an hour when the garden-men have gone to dinner, or gone home, and make our own little secret arrangements with some special plant. To dig it up, perchance,

and replant it elsewhere, water and tend it, and watch the growth (or the death) of it—the pleasure doubled, inasmuch as nobody else knows anything about it. And then the old saying comes true enough, that more springs in the garden than the gardener ever planted." A legend which may pass at Yule-tide is quoted by the author, to the effect that *Sanguinaria canadensis* was the herb which the Israelites in Egypt dipped in sacrificial blood and marked with it their door-posts. If this be so, the Israelites must have had more intimate acquaintance with the American continent than we

to pay the expenses of a year's campaign, the writer undertook the management of garden and of gardener, and the pages before us are the chronicle of her mild adventures. *Elizabeth and Her German Garden*, as well as those written by "E. V. B.," have familiarised us with the autobiographical or diary type of gardening book, and have somewhat spoilt us for efforts of a similar kind. Still, there is a large public to whom every readable treatise on gardening is acceptable, and to these we cordially recommend *How the Garden Grew*.

foliage; a Virginian Creeper for the red leaves in autumn; a *Gloire de Dijon*, since it seemed to prosper in my soil; *Clematis*, both *montana* and *flammula*, and any number of the coloured varieties; a *Wisteria* (*sic*), as we had none; a pink and a white *Banksia*; a W. A. Richardson and a *Crimson Rambler*. My arch having but two sides, I was obliged to offend a good many voters, and, despite jeers as to my former failures, I decided on giving the *Crimson Rambler* another try. . . . The beginning of November I unearthed the *Ramblers* that even still refused to ramble, and soon the cause of their stunted condition was laid bare. 'Pot-bound! Who!' said Griggs, 'so they are! Curious! I don't moine 'avi' see'd 'em look like that. Maybe I was drefful 'urried at the toime, and never paid no 'eed.' As he spoke he tore at the poor roots, confined with a web-like substance, just the shape of the pot they had come in."

"Griggs" is the gardener and general factotum, whose mental denseness the ambitious amateur endeavours to relieve. For one at first so professedly ignorant about gardening the authoress manages to effect a good deal in a short time, so that her chronicle reads like that of the experiences of several summers told, for convenience sake, as the doings of a single year. We think the tale will encourage other plant-lovers to make their gardens also grow, and we hope they will glean useful hints as well as enthusiasm from Maud Maryon's book, which, if not remarkably original as a whole, at any rate contains some practical information.

It should be added that there are four illustrations by Gordon Browne; one picture for each season of the year, and representing (presumably) the young man and the authoress, busily engaged looking at the garden or at each other.

THE WEATHER IN WEST HERTS.

FOR more than a fortnight the weather has continued exceptionally warm for December. On twelve days during this very warm period the highest shade temperature exceeded 50°, and on five nights the lowest readings were higher than would be seasonable in the middle of the day. The ground is of course still unusually warm, being about 5° warmer than the average, both at 1 foot and 2 feet deep. Since the month began there have been only five days without rain, but the total quantity deposited is very slightly in excess of the mean for the first half of December. During the past week about 1½ gallon of rain-water passed through each of the percolation gauges. As compared with previous weeks the two most noteworthy features have been the better records of sunshine, and the greater dryness of the air. For more than a fortnight the winds have come almost exclusively from some point of the compass between south and west. As an indication of the mildness of the season, I may state that *Omphalodes verna* came into flower in my garden on the 10th inst. E. M., Berkhamsted, December 18.

BIRDS AND BUSH-FRUIT.

THE birds are now beginning their ravages on the Gooseberries and Currants, and if snow falls, so that the birds' food supply is cut off to a great extent, they may damage the trees so as to lessen next year's fruit crop by a half. There are two easy ways of keeping them off. One is by sprinkling the trees with soot three or four times during the winter, which can be done easily, and, without getting in a mess, by using a knife-powder or disinfectant-powder-tin with a perforated lid. It should be done on a still, damp day, so that the soot falls where intended, and also sticks to the branches. The other way, which can only be adopted if the trees are in well defined lines, is to stretch four or five strands of twine just over the top of the trees. By attaching it to the trees at the ends of the rows, it can be run along backwards and forwards as fast as one can walk. The birds flying out of the trees



FIG. 151.—A GOOD HOME-GROWN BUNCH OF BANANAS. (SEE P. 458.)

have given them credit for. Corpse Candles are here referred to that atrociously-smelling fungus, the Stink-horn, whose mode of growth is interestingly described. The illustrations are very attractive, and the whole book will be read with pleasure by those who love their garden.

BOOK NOTICE.

HOW THE GARDEN GREW. By Maud Maryon. (Longmans, Green & Co., 39, Paternoster Row.)

THE efficient cause of the growth of the garden was the "fiver" presented by "his Reverence" to the author of this volume. With the sum of £5

In the beginning we find the authoress professedly so ignorant as not to know the root from the leaf-end of the bulbs; through four seasons we trace her increase of knowledge and success; the whole account marked by colloquial expressions often worthy of the harsher term of "slang." A suspicion that the author's romance begins where her horticultural history ends is aroused by the references to the "young man," but he is too shadowy a personage to attract very much attention or interest. The following extract gives a very fair idea of "Maud Maryon's" style in the most serious pages of her book; the description is of the erection of an iron and wire-netting arch:—"We consulted as to its covering, and, had all suggestions been taken, it would have had to bear a Vine on account of its

suddenly knock against the twine, which effectually frightens them from coming again. The twine should not be taken off until the trees get well in leaf, as the birds are very fond of the bursting buds. *Alger Petts.*

THE GRAPE-FRUIT.

THE Grape-fruit is no other than a variety of *Citrus Decumana*. It got its absurd name, I believe, in the United States, owing to a number of fruits being set close to each other and forming a sort of bunch. It is a variety of the Shaddock; the latter having got its name, it is said, from a Captain Shaddock, who first introduced it into the West Indies. The forbidden fruit, so-called, of Palestine is another variety of the same species with an absurd name.

In India they have numerous varieties. In Bengal one is called Batâbi lembo, from Batavia. In Upper India they have a variety called Mahtabi (moon-like), but obviously a corruption of Batâbi. Another is called Chakôtra, after the ancient name of Batavia, viz., Jakâtra! The Dutch appear to have been great disseminators of this *Citrus Decumana*, which they found in several varieties in the Malay Archipelago, in the time of Rumphius. I have never heard that *Citrus*-trees sport, and not improbably all the varieties of the different sections or races originated from seed variation.

The Arab and Persian seamen were coast-navigators, and must have taken these fruits from place to place; after them the Portuguese and Dutch helped also to disseminate them through the fruit and their contained seeds. *Geo. Bonavia.*

NOTES FROM IRELAND.

VERY rainy weather has prevailed for some time, and much land in low-lying localities was flooded; the streams being greatly swollen, notably the Liffey.

THE ROYAL HORTICULTURAL SOCIETY.

The annual meeting of the above society, recently held in the Central Lecture Hall, Westmoreland Street (H. Greenwood Pim, Esq., M.A., Monks-town, in the Chair), was fairly well attended. Mr. Edmund D'Olier, as honorary secretary, read the annual report and statement of accounts, and prior to its adoption, the committee deplored the fact that the financial state of the society was most unsatisfactory; the deficit amounts to £151 1s. 3d., induced partly by the unfavourable weather, partly because it is too exclusive, in not catering for the working classes, and by closing their summer displays at six o'clock (preventing many from admission at popular prices). Their spring, summer, and winter floral contests were marred by unfavourable weather. In order to lessen expenditure, the spring show will be dropped, as it has never been remunerative—in fact, it has caused a yearly loss of £128, despite the fact that the quality of the exhibits had improved in quality. The necessity of largely increasing the membership was driven home, and practical steps in that direction advocated.

Mr. F. W. Moore, M.R.I.A., in moving the adoption of the report and statement of accounts, regretted that the Society was obliged to commence the new century by doing away with the spring show; and if the members personally wished to have a display for this period, the Society should have a guarantee of £50 to do so, and he would be pleased to become a guarantor, and gladly subscribe to the fund, otherwise the action as laid down in the report must be followed to its logical conclusion. Sir Percy Grace, Bart., seconded the motion.

Mr. Russell, in a lengthy speech, reviewed the action of the Society, and was sorry the executive did not try and hold out inducements to growers to handle (especially the market growers) their fruit in a proper manner; likewise to grade the fruit prior to forwarding it to market. He dwelt on the necessity of admitting children from the

institutions to their shows free of cost, the invitations to be unsectarian; also the necessity of "side shows" as a means of recouping their losses. He likewise emphasized a very important point, viz., the lack of good management that their exhibitors suffer from, as seen in the dearth of facilities in the matter of staging.

Mr. E. Bewlay hoped the change would not take place, and wished that the Society would include classes so graduated as a means of bringing a bigger array of exhibitors to the Society's shows.

The motion by Mr. Moore, and seconded by Mr. McGregor, was adopted, namely, to issue circulars asking the members what support they would give in order to retain the spring show. After several new members were voted to become members of the Council, and the thanks of the meeting were conferred on Mr. Greenwood Pim for his conduct in the chair, the proceedings terminated. *A. O'Neill.*

immense size. There are also Alicante, Gros Colmar, Muscat of Alexandria, and other home-grown productions of fine quality and size, bunches that will weigh a pound to a pound-and-a-half. There is also the well-known Almeira Grape which come in barrels; Strawberries are not yet in large quantities; Bananas are abundant, which vary considerably in quality, the short, smooth, thick, round ones are superior to the long, thin-ribbed ones. Pineapples are fine and low in price. Persimmon, a fruit in appearance like a Tomato; Pears of home-grown, French, and Californian, comprising Glout Morceau, Easter Beurré, Bon Curé, Bishop's Thumbs, and others. For stewing, the Catillac is the best; some of the Glout Morceaux and Easter Beurrés are very fine fruits. The French are packed in a single layer of twenty-one or twenty-four according to size. Among Apples, of which there is a large quantity, the sorts are too numerous to name. Of the

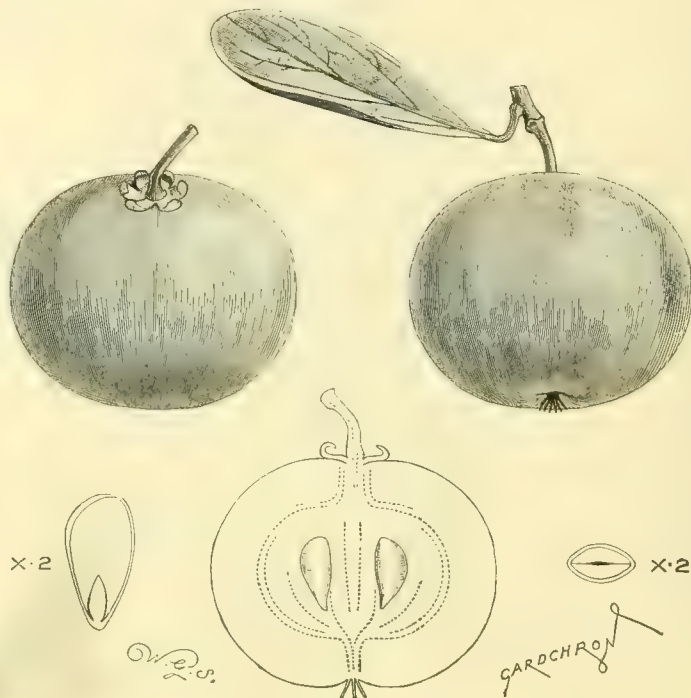


FIG. 152.—ABERIA CAFFRA (KEI APPLE). (SEE P. 450.)

COVENT GARDEN AT CHRISTMAS.

THE greatest of all markets now presents the appearance usual at this season, by the addition of Holly and Mistletoe, Ivies, Laurels, Spruce Firs of various sizes for Christmas-trees, with various other shrubs and plants for decoration, with a large and varied assortment of choice plants and flowers in pots, and cut blooms. The flower market, one of the sights of London, should be seen in the early morning (as it closes at 9 A.M.) to form any idea of the number and quality of plants and flowers on sale. The Holly and Mistletoe are both well berried; the greater part of the Mistletoe comes from Normandy and Brittany in crates containing about 1 cwt. The Holly, Firs, and other decorative plants will be found chiefly in the uncovered section of the market on the south side, contiguous to the flower market; the various fruits and vegetables may be found in all or any of the other sections of the great place.

Among the fruits none compare to our home-grown Grapes, and they can, if needs be, be purchased literally by the ton, such is the production. The writer saw among others this season a bunch of Canon Hall Muscats weighing 5 lb. with berries of

best dessert, Cox's Orange and Ribston Pippins are to the fore, though it is getting late for them. It is admitted by those who really know what good Apples are, that no country has as yet produced any to surpass them. There are also Newtown Pippins, American and Californian; the last-named come well packed in boxes of about 40 pounds weight—the American, Canadian, and Nova Scotian come in barrels. The chief sorts now coming are Kings, Greenings, and Baldwins. Our home-grown Apples come in baskets holding a bushel or half a bushel. Among the best cookers will be found Blenheim, Sourings, and Wellingtons, with a variety of others at low prices.

Among fruits not generally known are Avocado or Alligator Pears, Custard-Apples, Persimmons, Mangos, and Litchis, the last-named little, round, nut-like fruit, has apparently come to stay; and Grape-fruits from the West Indies. Of Oranges, there are Jamaica, Jaffa, Murcia, Teneriffe, Tangierine, &c.; Dates in fancy boxes, and others by the hundred-weight; Lemons of various sorts. Cranberries, of two kinds, the American, Cherry-like fruit, and the Russian, like Red Currants; the first are in cases, the last in kegs, owing to their juicy nature. Of nuts, there are the Kentish Cobs, Almonds, Brazils,

Chestnuts, Barcelonas, Spanish Coker-nuts, Sapucaya, Brazil pods, &c.

Of vegetables there are Asparagus "Sprue," Paris Green, and Giant; Seakale, Beans of the dwarf kind, home-grown Channel Islands, Madeira, and French; Artichokes, Globe, Stachys or Chinese, and Jerusalem; Rhubarb, Tomatos in plenty, Spinach, Cauliflower, Broccoli, Brussel Sprouts, Colewort, and other Cabbages; Cucumbers, Mushrooms, Celery, Chicory, Batavian and other, Endive, Lettuce, Cress, Barbe de Capucine, &c. Of roots which are very good and abundant, there are Beetroots, Parsnips, Carrots, Turnips, all of which are reasonable in

PERNETTYAS.

DURING the dull winter months, when outdoor flowers are mostly absent in gardens, the value of shrubs possessing ornamental foliage or showy fruit is appreciated for decorative purposes. Especially is this true of Pernettyas, or Prickly Heaths. This genus consists of about twelve species, of which there are many garden forms, comprising hardy and half-hardy shrubs, in most cases evergreen or nearly so, and which for the most part are natives of Mexico, Chili, Brazil, and the western part of North America, while one species is a native of

colour. Its berries, which are freely produced, are of a red colour, varying considerably when raised from seed, and ranging from purplish-black to white. The species has received considerable attention from Mr. L. J. Davis, Co. Down, Ireland, who has greatly improved the type by cross-breeding, and the forms he has raised have larger berries and much diversity of colour. It is scarcely necessary to refer to all the varieties, but Mr. Davis' best are *P. mucronata alba*, a pure white form slightly tinged with rose, berries large and freely produced. *P. mucronata rosea*, as its name implies, has rose-coloured fruits, and *P. m. rosea macrocarpa* has very large fruits, rosy-crimson in colour, while those of *P. rosea coccinea* are of a much brighter shade. In the berries of *P. rubra lilacina* appears a light shade of crimson, in *P. rubra sanguinea* a deeper shade, while those of the type, *P. mucronata rubra*, are the deepest colour of all, being of a rich dark crimson. All of the foregoing are marked improvements on the old forms, and are deserving of more recognition by gardeners.

Another form of *P. mucronata*, but frequently described as a distinct species, is *P. mucronata angustifolia*, having much narrower leaves than those of the type. Although figured in the *Botanical Magazine*, 3889, and *Botanical Register* of 1840, p. 63, as *Pernettya angustifolia*, it is now regarded by most authorities as simply a form of *P. mucronata*, it appearing identical in all other respects. Another species not nearly so well known, but which has proved quite hardy in the South, is *P. ciliaris* (fig. 153). Its flowers are white, flowering during June and July. The leaves are ovate lanceolate in shape, acute, thickly furnished on the margins with bristles, while the young branches are also bristly. It was introduced from Mexico in 1849, and will be found fully described in *Gardeners' Chronicle*, July 20, 1878, p. 89. It should be better known, as it is well deserving of culture, forming a neat and compact little shrub, from 1½ to 2 feet in height. *P. Pentlandi*, an interesting species introduced from the Andes in 1875, is also well worth noting. This species forms a stiff, erect, branched shrub from 2 to 2½ feet in height. Its flowers are white, ovate, globose, produced singly, and drooping during June and July, succeeded later by large fruits of a dark purplish-blue colour. The leaves are ovate lanceolate in shape, acute, serrated, and shiny. It is of easy culture, hardy, and showy. A description of this species appears in *Botanical Magazine*, p. 6204. *P. pilosa*, a dwarf species rarely exceeding 6 inches in height, is a useful shrub for the rockery, its trailing or creeping habit being admirably adapted for that purpose. In some gardens it is known as *Arbutus pilosa*. The flowers are white, produced in May, its leaves being ovate elliptic in shape, deep green, serrated and toothed round the margins, and very shiny. It is described in *Botanical Magazine*, p. 3177, and was introduced from Mexico in 1839. Another interesting type is that of *Pernettya furens*, likewise a native of Chili. This species grows about 2 feet in height, has white flowers, produced abundantly on solitary axillary racemes during March and April; its leaves are ovate lanceolate, serrated on their margins, deep green in colour, with red petioles. It is rarely seen in gardens, although useful and desirable. *P. prostrata*, a distinct species, of dwarf and spreading habit, is well adapted for planting on the rockery. It resembles somewhat *Pernettya pilosa*, but is quite distinct in every way; it possesses pure white flowers, but I have not observed any berries. There are several other species frequently noted in botanic gardens, such as *P. Camingii*, from Mexico; *P. pumila*, from the Straits of Magellan; *P. floribunda*, from tropical South America (fig. 154, p. 465); but these for practical garden purposes are not so decorative as those already noted previously. *E. S., Woking.* [A number of fruiting shoots of the various forms of *P. mucronata* were obligingly sent by our correspondent for our inspection, and these quite bear out his statements. ED.]



FIG. 153.—PERNETTYA CILIARIS.

price. It is becoming the custom now to send the last three named roots in cwt. bags, thus saving an immense amount of labour. Onions from various countries; Potatos in plenty, but good samples of fine quality and flavour are rare, many tubers that look all right, are found when cooked, to have a disagreeable flavour. The crop in past seasons has been an abundant one, and prices have ruled low, particularly in the case of Vegetable-Marrows and Runner Beans; and fruits, Gooseberries, Plums, and Damsons, in many cases not realising enough to pay the charges after being put on rail.

The enormous supplies from all parts of the world to this market is increasing, and particularly is this the case with Bananas and Tomatos, which, together with Apples, can now be had all the year round. The importation of new Potatos from Tenerife has commenced. *T. P.*

New Zealand. To grow Pernettyas successfully they should be planted in a moist situation in peaty soil, such as that generally employed for hardy Ericas, Gaultherias, and Azaleas, but this is by no means always necessary, as they will grow well in soils of a sandy nature that are fairly moist at all seasons. They are of easy culture, and readily increased by means of layers of the young shoots, and seeds. The finest species, and one that is thoroughly hardy, *Pernettya mucronata*, is a native of the Straits of Magellan, introduced in 1828. It grows from 4 to 6 feet high, and forms a pretty, compact-growing evergreen shrub; its flowers are produced from May to July. The leaves are ovate, cuspidate, denticulate, and serrated round the margins, very stiff, shiny on both surfaces, and of a deep green

HOME CORRESPONDENCE.

MARKET GARDENING AND COMMISSION SALESMEN.—Will you be kind enough to grant me a little space for a few remarks upon the subject of market gardening. In the first place, I will ask if market gardening is profitable under the difficult conditions it has to contend with now-a-days. If not, what are the reasons? I will endeavour to point out one or two that I know of, as showing where the profit goes to, and how I think the grievance may be altered. In the first place, I will take a single case that came to my knowledge so recently as the week before last from a market gardener. This man had a large surplus of Roses which he could not possibly sell in the district in which he resides, so he sent to a market salesman seventy-two dozen blooms. Now, how much do you think he got per dozen? the paltry sum of 2½d. Now, the next week the same grower purchased of the same salesman four dozen Roses, for which he had to pay 3s. per dozen. Now, it is very clear to whom the market gardener's profits go. How is it that we cannot alter this state of affairs? Why should hard-working men strive from year's end to year's end to put such enormous profits into the middleman's pocket? It seems to my thinking that with a small amount of effort we can alter all this by forming an association, and putting good salesmen into every large town to sell our goods, paying them a sufficient salary, and thus sell our own goods at first hand, allowing a certain percentage for commission to go to the association. A scheme such as this would enable the growers to produce a better article, which would suit the public better, and enable them (the market gardeners) to pay better wages to their workpeople—and in fact, better everybody all round. *Market Gardener.*

MRS. BRYANT CHRYSANTHEMUM.—It is far from my wish to rob Mr. Bryant of the honour attached to the raising of the Chrysanthemum above-named. My note of this variety was taken along with one or two others at the Drill Hall meeting of the Royal Horticultural Society, when the awards were given, and included in my notes on p. 412, hence the mistake. I naturally took it, not knowing otherwise, to be a variety of Mr. Perkins' own raising. *C. H.*

MILD WEATHER IN YORKSHIRE.—It may be worth while recording, as an evidence of the exceedingly mild weather experienced in this part of Yorkshire, that I cut in these gardens from outside on Saturday, December 15, a bunch of twenty Roses—Teas, Hybrid Teas, and Hybrid Perpetuals. The same was done about ten days previous. I send one or two buds which I cut to-day, though they do not reach the average by any means of those cut on Saturday. This must be unusual, only ten days from Christmas. *J. Snell, Farnley Gardens, Otley.*

PLANARIAN WORMS.—It may interest your readers to know that the Planarian worm—*Bipolium Kewense*—was fairly common in the glass-houses at Pendell Court, Bletchingley, ten years ago. The first one found was in the Orchid-house. The late Sir George Macleay had it sent to be determined, and it turned out to be the above-named creature. I was then foreman of the glass department, so that I had opportunities to watch the habits of the worms, and I found them in several other places, and came to the conclusion that it was one more garden-pest; still I never once found that it preyed on vegetation, but seemed to feed entirely on insects and worms. I have found them attached to worms partially eaten, and also those brown millipedes that are so often found on Orchid-stages. I seldom found them in the daytime, unless beneath the stages, slates, or pots, as they prefer a damp spot; but in the evening, when I went round with a lantern was the time to see them moving about in search of food. I should compare its usefulness to that of "*Testacella haliotidea*," that curious slug with a small shell attached to the hinder part of the back. If Mr. Ringham is wise he will not execute his interesting visitor till he has given it a chance to prove if it is useful or not. *C. F. Wood, gr., The Grange, Ealing.*

CONING OF SEQUOIA (WELLINGTONIA) GIGANTEA.—In reply to your correspondent Mr. Elwes, I beg to inform you that I once saw *Sequoia* (Wellingtonia) gigantea bearing cones at Mark's Hall, Essex, but I am unable to say if these

ripened. They grew near the summit of the tree, and appeared to be quite young. I should judge the age of the tree to be about twenty years. Conifers seem to thrive and fruit very freely on the estate mentioned. The boughs of a Cedar of Lebanon are regularly lined with cones—simply weighed down with them. *Wm. R. Reader, Greenwoods, Stock, Ingatestone.* [The Wellingtonia often produces cones in this country, but does it ripen its seeds? *Ed.*]

CLEMATIS SONGARICA.—A plant of this species is established here. It is a vigorous grower, and although only planted a few years, is already at the top of a tree 30 feet high. It scarcely comes into the yellow-flowered group, the colour being a sort of purplish-green; the flowers are produced freely enough, but they are not showy. There is a yellow-flowered species named *C. Wilfordi*, very like *C. graveolens*, but with narrower, almost linear leaflets, the flowers of which are of a good yellow tint, but the species is, with us at least, not a very free grower. *C. paniculata* is a distinct and useful late-flowering species, of which a plant in mid-December is scarcely out of flower. The flowers are white, and they are freely produced. *T. Smith, Newry.*

SEEDING OF BEGONIA GLOIRE DE LORRAINE.—Messrs. Heath's note in a recent issue of the *Gardeners' Chronicle* regarding the above, prompted me to look over our plants, and I had the satisfaction of finding no fewer than six female flowers on one plant; but I failed to find any more on the plants. I shall carefully fertilise these blooms with pollen taken from other species and varieties. My friend, Mr. Geo. Fulford, gardener at Presdales, Ware, Hertfordshire, informs me that he has already sown seeds of *Begonia Gloire de Lorraine*. *W. J. Grace, Bickton, Fordingbridge.*

BERRIED PERNETTYAS FOR AUTUMN DECORATION.—A bed of the new varieties of *Pernettya*, to be seen at the present time on the lawn of Gunnersbury Park, illustrates in a remarkable manner the value of the new varieties as ornamental decorative plants in autumn. They are just now full of lusty life, and laden with generous crops of fruit. The wonder is they are not more frequently employed in this way. At Gunnersbury Park the plants occupy a large circular bed, in which they have grown so vigorously that they touch each other, and their lavish crops of berries cannot of course be seen to the best advantage. It is Mr. Reynolds' intention to transfer the plants to a larger bed where there is ample space in which to display their decorative value. In habit of growth, in the character of the foliage, and in the size and colour of the berries, much variation can be seen. The narrow leaves of *P. angustifolia* appear in some, the larger ones of *P. mucronata* in others. Probably the new forms owe more of their parentage to the former than to the latter, for it was from *P. angustifolia* that Mr. L. T. Davis, of Ogle's Grove Nursery, Hillsborough, Ireland, secured his first crop of seed, and raised his first batch of seedlings some forty years ago. Much diversity of character was shown among the seedlings. Mr. Davis made a selection from these, took seed from them, and in this way secured the batch of seedlings he distributed at that time. There are several bearing distinctive names, and the colours of their berries vary from white to dark crimson and maroon; while they are produced in large and striking clusters, rivalling in their effect any other plant we have in berry at this season of the year. There is before me as I write, a vase of branches of the *Pernettya* mingled with the bright deep orange ones of *Crataegus Pyracantha* var. *Laelandi*, and they go well together. I have this season seen at Chrysanthemum exhibitions many baskets of autumn foliage and berries, but in not one of them did I perceive any signs of the berries of the *Pernettya*, or the fine form of the well-known *C. Pyracantha* above named. To do the *Pernettyas* justice, they should be in the open, and on a gentle slope facing the sun's course. They will grow under trees, and near shade, but they do not flower so freely as when in the open. They seem to thrive in any good garden soil, provided that it is not too heavy or soddened with water. They are perhaps seen to the best advantage in beds, where the berries allow of the contrast of one variety with another; they can also be made highly effective as isolated specimens. The varieties have the reputation of being constant in producing a

crop of berries, hence they are valuable for Christmas, church, and other decorations during the winter, when Holly is scarce. The neat growth and evergreen character of the *Pernettyas*, add to their value in the garden. *R. D.*

MUSA CAVENDISHI.—The enclosed photograph may be interesting, showing as it does what can be done with this handsome plant under indifferent conditions. The plant when photographed was just one year and five months old, and grown from a rootless sucker about 2 feet high. I have grown it the whole of the time in a lorry lean-to vinery. In this house I also grow a general collection of plants; I also house about 300 seedling *Chrysanthemums* in the autumn in it. I started the sucker in a 10-inch pot, and the next shift was into the tub, which is only 2 feet 6 inches deep, and 2 feet across, and contains about two barrow-loads of soil, composed of loam, cow-manure, and Jadoo-fibre, and a portion of sea sand; in this mixture it made rapid growth, some of the leaves being 6 feet long and 2 feet 3 inches broad. The bunch contains over 200 fruits, and the plant has thrown up a number of suckers. At the present time there are six suckers in the tub; some of them I intend to use in the spring. I may say the plant has been greatly admired. *J. Bryant, Gothland Villa Gardens, Sandown, I.O.W.* [Having so recently illustrated the plant, it is not necessary to reproduce our correspondent's photograph. His letter shows what may be done under not very favourable circumstances. *Ed.*]

SCOTTISH PEARS.—The Pear-crop of the present year was the smallest that I can remember, but what is lost in bulk is made up in superior quality, which is the more remarkable, the season having been the wettest for the last twenty years—as some observers declare, the wettest since 1864. The weather of the early summer months was perfect, and the foliage of all kinds of trees, including Pears was remarkable for its large size and freedom from blemish, and this condition of the leaves may have extended to the fruits. But I think that the chief reason for the delicious flavour of Pears this year is to be found in the crop being a light one. We find in other kinds of fruit that excessive bearing and good flavour do not go together. Those of us who do not habitually thin the fruits when over-abundant should take a hint from this fact. There are some varieties which seem as if nothing would improve their quality, and *Souvenir du Congrès* is one of them. It never fails to crop well and produce large and handsome fruits, yet they are so poor in flavour that one has to send them to the kitchen rather than employ them for the dessert. *Beurré Bachelier* is now ripening, and is another which is rarely fit for dessert, and it also finds its way to the kitchen. *Beurré Clairgeau* is generally fit only for culinary purposes, but this year its flavour was markedly superior to what it has been in the run of years. Our most delicious Pear so far has been *Bergamot d'Esperen*, finer even than the *Marie Louise*. *Emile d'Heyst* is generally about equal to the latter, but it has failed to crop this year, hence a comparison was not possible. *Beurré d'Amanlis* is a variety that has not benefited to the extent of some of the others, and here it is only slightly better in quality than *Souvenir du Congrès*. *Duchesse d'Angoulême*, too, does not appear suitable for the Scottish climate; whilst *Pitmaston Duchess* has borne very large really excellent fruits. *Thomson's*, a delicious Pear in Scotland generally, is just coming into use; and, to follow it, is *Beurré Superfin*, always excellent; and *Hacon's Incomparable*, which is likewise first-rate. *Passe Colmar*, a variety very distinct from the Old Colmar, is one of the varieties that must be well thinned; it may be recommended for Scottish gardens. Trees of the delicious variety *Winter Nelis* have borne well; it is a variety that needs to be left till very late on the tree in order to procure it of the very finest flavour. Some persons assert that this is the finest of all varieties of Pears, but I cannot agree with them. *Knight's Monarch*, a variety generally to be relied upon here, bore but a small crop, as did that ugly but good variety *Ne plus Meuris*. Quite a number of the later ripening Pears are destitute of fruits. Some varieties, as *Glout Moreau* and *Beurré Diel*, are valueless on our light soil, though the first-named is esteemed as grown on heavy soils. *B. Midlothian.*

TWO FAVOURITE WINTER HARDY FLOWERS.—In the article on p. 398, concerning outdoor

flowers in winter, I do not find the names of two especial favourites which are always bright ornaments to my garden during the greater part of the three winter months—*Anemone blanda* and *Cyclamen Coum*. Of course, to produce any effect, they must be grown in large quantities, as they are here; but as both thrive in any situation, and ripen seed freely, which is easily raised, anyone may, with very little trouble, obtain a large stock in a few years. *Anemone blanda*, grown along 30 yards length at the base of a wall facing south, has a race with the Winter Aconites early in January which shall produce the first flowers, and others follow in quick succession until, by the end of January, there are generally thousands, and they go on flowering till quite the end of March.

Cyclamens thrive best when buried amongst stones in any aspect, and seem happiest when treated as rock-plants; but they are not easily offended with the surroundings given to them, if not overwhelmed by the coarse growth of their neighbours. To obtain a large stock of both these plants, their seeding-habits, which are very different, must be noticed. The seed of the *Anemone* ripens fast, generally early in May, and when ripe falls so readily that it is difficult to collect. Besides this, birds and mice are fond of it, though, if the soil beneath the plants is kept open, and never vexed with rakes or forks, sufficient escapes to produce a crop round or amongst the parents. It does not come up, however, till the end of the winter after it ripens, and the young ones, which flower a year or

found in the wetter parts of the dell. Here the Oaks measure from 9 to 12 feet in circumference at 3 feet from the ground, and possess clear stems 50 to 80 feet in height, the best and most profitable timber to be seen on the estate, and the most notable feature of the grounds around the castle. So far as the statement goes that two species, *Quercus pedunculata* and *Q. sessilifolia*, need varying degrees of moisture at the root for their perfect development, this is most misleading. The best rule for both, according to Mr. Divers, and as to which I am quite prepared to agree with him, may be stated thus—that the best conditions for forest trees are that kind of irregularity which accompanies a succession of years. These conditions hold force with most Spruce Firs, the Spruce



FIG. 154.—*PERNETTYA FLORIBUNDA*. (SEE P. 463.)

The deep violet-coloured form from Greece used to be thought the best, but now we have so many varieties of colour and size introduced from different parts of Asia Minor, that it is difficult to keep any of them distinct. The largest flowers are either quite white or have a well-defined and large white centre, with the rest of the sepals clear sky-blue. The flowers will bear many degrees of frost without injury, and are no worse for lying several days covered with snow. Of *Cyclamen Coum*, I generally expect to find the first flowers about Christmas-day, and they are quite as enduring of winter weather as the *Anemones*, and vary in colour as much—from white to dark crimson. I may here say, that *C. Coum*, which has become much cheaper in nurseries than formerly, includes in my garden many bought as *C. ibericum* and *C. Atkinsii*. I do not deny that there may be distinct kinds to which these names belong, but I have never succeeded in getting them. These

two later, should never be disturbed. The *Cyclamen* takes nine months to ripen its seed, and though in favoured corners it comes up well when shed, the young plants are more easily dealt with if the seed is collected and sown in boxes. The seed, which ripens in September, germinates at once, and comes to flowering-size as quickly as the *Anemones*; but it takes longer to establish a large stock of the *Cyclamen*, the flowers of which can only be counted by the hundred, whilst the *Anemones* are displaying thousands. *C. Wolley Dod*, *Edge Hall, Malpas*.

PARTIALLY-FLOODED OAKS AT BELVOIR AND ELSEWHERE.—Years ago, on a visit to that genial man, the late W. Ingram, gr. to the Duke of Rutland, at Belvoir Castle, I was much struck with the size and vigour of the Oaks mentioned by Mr. Divers in the *Gardeners' Chronicle*, November 24. It is an undoubted fact that the finest trees are

Douglas, and other Conifers, and most deciduous trees and shrubs. Their roots live in the soil, and evidently Nature enables the trees to thrive though their roots are plunged for a time in water. That, at least, was my first sight of a partially submerged island of the greenest variety of this Douglas Fir, flooded a yard in depth. It may be wise as well at times as profitable to plant land liable to be flooded, and note the result. *D. T. F.*

TRADE NOTICE.

MESSES. ALEXANDER DICKSONS, of Royal Avenue, Belfast, and The Nurseries, Newtownards, of Rose fame, have become a private company. Owing to family reasons, however, no shares will be offered to the public.

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 18.—The meetings of the Committees of the Royal Horticultural Society for the nineteenth century were brought to a close on Tuesday last. The display made on that occasion in the Drill Hall, James Street, Westminster, was not extensive, and the attendance of Fellows was scarcely so good as usual at the last meeting for the year, when members of the various committees have sometimes attended in considerable numbers, apparently with a desire to wish each other the compliments of the season.

There was no lecture on Tuesday, but at 3 P.M. there were twenty-nine new Fellows added to the Society's roll, making the number of recruits during the year up to about six hundred and seventy. The Society will commence the twentieth century stronger than it has ever been.

The ORCHID COMMITTEE recommended the awards of two First-class Certificates, a Botanical Certificate, and two Awards of Merit. Cypripediums were shown most numerous.

The FLORAL COMMITTEE recommended Awards of Merit to a new *Coleus* known as *C. thyrsoideus*, and to a decorative variety of the *Chrysanthemum*.

Awards were recommended by the FRUIT and VEGETABLE COMMITTEE to six varieties of Celery, a Potato, and to the old Pear Olivier des Serres.

Floral Committee.

Present: W. Marshall, Esq., in the Chair; and Messrs. C. T. Drury, H. B. May, R. Dean, W. Howe, W. Bain, C. E. Pearson, C. E. Shea, G. Gordon, H. J. Cutbush, W. J. James, E. T. Cook, C. Blick, G. Paul, H. J. Jones, and J. Walker.

MESSRS. R. & G. CUTHBERT, Southgate Nurseries, Middlesex, showed a group of forced double-flowered Daffodils in pots under the name of Early Double Golden. It is a variety of the common Daffodil that may be forced with exceptional ease (Bronze Flora Medal).

MESSRS. H. CANNELL & SONS, Swanley, Kent, showed sprays of flowers of zonal Pelargoniums, including some novelties for next season. Such were General Buller, crimson, with purple shading; Lord Roberts, deep plum colour, large; Sir John Llewellyn, crimson-scarlet, very large; Thos. E. Green, very bright orange colour with pearly-white eye, very distinct; Lord Curzon, rosy-magenta; General French, very rich pink, occasionally bright scarlet, &c. All of them are exceedingly good in colour, and of large and excellent form (Silver Flora Medal).

Chrysanthemums were very nicely shown by Lord ALDENHAM, Aldenham House, Elstree, Herts (gr., Mr. E. Beckett), who had about twenty bunches of late-flowering decorative varieties in vases. None of those shown was new, but the flowers were unusually good, and perfectly fresh in appearance. Some of the more effective were Princess Victoria, white; King of the Plumes, yellow; Jessica, an American variety, white; W. H. Lincoln, too well known to need any description; Miss Filkins, a yellow variety with narrow-forked florets; Miss D. B. Crane, a large mauve-coloured single flower; Niveum, Perle, a small Anemone-flowered variety; Golden Gem, and Kate Williams, single yellow (Silver Flora Medal).

Begonia Gloire de Lorraine was shown as a group of plants from the Earl of ANCASTER, Stamford (gr., Mr. J. Butler). These were very freely flowered, but not quite so good in colour as this Begonia has been exhibited at the Drill Hall. From the same gardens were shown bunches of the newer varieties of Violets, and a flowering branch of Chimnanthus fragrans (Silver Banksian Medal).

MESSRS. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, again exhibited a group of plants of Begonia \times Socotrana hybrids, the value of which, for winter flowering, we have already remarked upon. The varieties displayed were Winter Cheer and Ensign, both of which were described in *Gard. Chron.*, November 24, p. 372 (Silver Flora Medal).

MESSRS. VEITCH also showed blooms of the greenhouse Rhododendrons again, and the present date being very near to St. Thomas' Day, we will enumerate the varieties, all of which are valuable plants in the winter season as in any other. Lutem roseum, Diadem, brownish-red; Maiden's Blush, pink; Conqueror, red; multicolor Neptune, red; Princess Alexandra, nearly white; Hercules, a first-class yellow variety, flowers very large; Jasminiflorum carminatum, the old Princess Royal, Numa, deep red; Cereis, rich yellow; Balsaminiflora Rajah, multicolor Mrs. Heal, M. Ruby, very deep ruby colour; and Balsaminiflora aureus.

From Sir T. LAWRENCE's garden at Burford (gr., Mr. Bain), the fine variety of *Lapageria rosea* known as the "The Krol" variety was again exhibited.

An inflorescence of *Ornithogalum lacteum* was shown, which was gathered on Table Mountain, Cape Town, on November 27, and put into a cold store on board ship on November 23. The specimen was perfectly fresh, and many flowers as yet unexpanded. The long time that flowers of this species are capable of remaining fresh has been noted in these columns on several occasions, and an experience of our own in respect to some flowers which were cut in South Africa, may be found in the *Gardeners' Chronicle*, Dec. 23, 1893, p. 750 (Vote of Thanks).

MESSRS. W. WELLS & CO., Earlswood, Redhill, exhibited cut blooms of *Chrysanthemums* Golden Princess Victoria, a yellow sport from Princess Victoria; and a white decorative Letrier, described in previous reports.

The variety of *Carnation* known as America was again upon the tables, good specimens coming from Messrs. PAUL & SON, Cheshunt. MESSRS. PAUL also showed a plant of *Senecio lilacinus*, an African species, with single, purple-coloured flowers, something like *S. pulcher*, but the leaves are distinct.

Mr. MOORE, Glasnevin Botanic Gardens, exhibited an inflorescence of *Dracena reflexa*.

Awards.

Chrysanthemum Jessica.—A white variety, useful for decorative purposes at a late date in the season. The variety is not new, and originally came from America. From Lord ALDENHAM (Award of Merit).

Coleus thyrsoideus.—This is a new species of *Coleus*, received at Kew several years ago, from British Central Africa, where it was discovered by Mr. WHYTE. A few seeds were obtained from Mr. WHYTE's specimens, and plants raised at Kew flowered in that establishment in February, 1898. The habit of the plant is similar to that of an ordinary *Coleus*. The leaf petioles are $1\frac{1}{2}$ to 2 inches long, and the bright green leaves, triangular, nearly $2\frac{1}{2}$ inches wide, and rather more than this in length, with coarsely serrated or toothed margin. The inflorescence is terminal, thyrsoid, and upon the specimens exhibited about 8 inches long. The flowers are very numerous, about $\frac{1}{2}$ inch long, and rich Gentian blue in colour. From the specimens shown by Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, Chelsea, and especially those from MESSRS. F. SANDER & CO., St. Albans, we should judge the species to be one that will prove very valuable for greenhouse cultivation; and as it comes into flower at midwinter, and continues good until the end of February, little more need be said to indicate the promise the plant now gives. No doubt the plant possesses a tendency to become "leggy," but this may be overcome by the cultivator. MESSRS. F. SANDER & CO. were awarded a Bronze Flora Medal for the group of plants shown from that establishment, and the horticultural value of the plant was estimated by the Floral Committee to be sufficiently appraised by the award of an Award of Merit. Perhaps a First-class Certificate may be accorded it on a subsequent occasion.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. J. S. O'Brien (Hon. Sec.), De B. Crawshaw, H. M. Pollett, H. Ballantine, H. Little, F. Sander, H. J. Chapman, E. Hill, W. H. Young, H. A. Tracy, F. J. Thorne, J. Douglas, and Jeremiah Colman.

The last meeting of the year was graced by a large number of exhibits, though a good proportion of them were cut spikes.

MESSRS. JAS. VEITCH & SONS, Chelsea, staged a very fine group, for which they were awarded a Silver Flora Medal. Of the newer hybrids were *Lælia* \times Mrs. M. Gratrix, the different specimens of which varied from pale yellow to orange colour; *Lælio-Cattleya* \times Coronis (*C. labiata* \times *L. cinnabarina*), of a copper-yellow with purple lip; *L.-C.* \times *leucasta* (*C. bicolor* \times *L. harpophylla*), with bright orange sepals and petals, and narrow purple lip; *L.-C.* \times *Terentia* (*L. crispata* \times *C. bicolor*), *Cattleya* \times *Breuteana* (*Loddigesii* \times *superba*), and others. At one end were grouped good plants of *Cypripedium* \times *Titus*, *C.* \times *Bruno*, *C.* \times *Lathamianum*, *C.* \times *Leeanum giganteum*, *C.* \times *Euryades*, *C.* \times *Acteus*, *C.* \times *enanthum superbum*, &c. The middle of the group contained cut examples of tastefully-arranged bunches of *Lælio-Cattleya* \times *Tiresias*, *L.-C.* \times *Semiramis*, *L.-C.* \times *Pallas*, *Lælia* \times *splendens*, *Cattleya leucoglossa*, the scarlet form of *Epidendrum* \times *O'Brienianum*, *E.* \times *Wallisio-ciliare*, and a number of good hybrid *Cypripediums*.

G. F. MOORE, Esq., Chardward, Bourton-on-the-Water (gr., Mr. Morris), staged a very fine exhibit of about three dozen varieties of *Cypripediums*, each, except in a few instances represented by three or more cut examples. Among them were a fine set of varieties of *Cypripedium* insigne, including the two fine varieties, *C. i. Sanderae*, and *C. i. "Harefield Hall."* With them were the best forms of *C.* \times *Leeanum*, *C.* \times *Niobe*, *C.* \times *Arthurianum*, &c. (Silver Flora Medal).

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr., Mr. Wm. Murray), sent *Cypripedium* insigne Sanderae "Oakwood variety," raised by fertilising the true *C. i. Sanderae*, a flower of which was also shown with its own pollen. The home-raised plant had a larger and better-formed flower, broader in all its parts, especially the larger rounded yellow pouch. Seen side by side, Mr. Cookson's variety is a distinct improvement.

R. I. MEASURES, Esq., Ladymead, Rogate, Sussex (gr., Mr. Wotton), sent *Cypripedium* \times *Zeus* (*callosum* \times *ciliolare*), and *C.* \times Charles Rickman, Ladymead variety, the latter a finely-formed and very bright-coloured variety.

F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent *Houlletia odoratissima* Lindeni, of a copper-red colour; *Maxillaria punctata*, *M. picta*, *M. longipetala*, and *Neobenthamia gracilis*.

HENRY LITTLE, Esq., Baronshalt, Twickenham (gr., Mr. Howard), showed a cut example of *Cattleya Percivaliana*, Little's variety, a very fine and distinct form.

See *Gardeners' Chronicle*, February 5, 1898, p. 79; and February 11, 1899, p. 82.

Lieut.-Col. SHIPWAY, Grove House, Chiswick (gr., Mr. Walters), showed two specimens of *Lælia autumnalis alba*, differing in quality, the best being perhaps the finest variety of this pure white *Lælia* yet shown.

M. CHAS. MARON, Brunoy, France, showed the beautiful *Cattleya Dowiana* "Rosita," a hybrid of *Lælia harpophylla*, said to be similar to the orange-coloured *L.-C.* \times *leucasta* (*C. bicolor* \times *L. harpophylla*); and another pretty light-coloured hybrid of unrecorded parentage.

C. H. FEILING, Esq., Southgate House, Southgate (gr., Mr. C. Stocking), showed *Cypripedium* *Boxall atratum* magnificum, a very large dark coloured flower.

C. STEWART HARRIS, Esq., Southgate (gr., Mr. E. Davis), showed *Cypripedium* \times *Hilda Davis* (insigne Chantini \times *Leeanum Englehardtii*), like a good *C.* \times *nitens*.

W. A. BILNEY, Esq., Fir Grange, Weybridge (gr., Mr. Whitlock), staged *Cymbidium* *Tracyanum*, Fir Grange variety, with large well-formed flowers.

MESSRS. F. SANDER & CO., St. Albans, showed a collection of their seedling *Epidendrum* \times *Endresio-Wallisii*, showing the extreme variability of this hybrid. All had pretty flowers, with white lips, having varying tints of violet-purple. The sepals and petals also varied, some being white with a few purple spots, others tinged and spotted with purple. One had the segments pale purple with a white base, and another was pale rose with ocellate purple spots on a white ground.

Awards.

Lælia \times Mrs. M. Gratrix *grandis* (Digbyana δ , cinnabarina η), from Messrs. JAS. VEITCH & SONS.—This pretty and distinct form had much larger flowers than those shown before, and the prettily fringed lip was better developed. Colour entirely of a clear straw-yellow (First-class Certificate).

Cattleya Dowiana Rosita, from Mr. CHAS. MARON, Brunoy, France, a noble flower of typical *C. Dowiana* form, but superb in colouring, differing entirely from previously known forms. The broad sepals are cream-white, tinged with purple. Petals rose-purple, with a yellowish tinge at the base, from which whitish veining runs over the surface of the petal between the coloured area. Lip large, rich crimson-purple, with golden veining running over the centre. It more nearly resembles *C.* \times *Hardyana*, than *C. Dowiana*. It is interesting as clearing up a mythical name. In 1893, the late Mr. RICHARD PEAU, of Costa Rica, sent a few small pieces to England as *C. Rosita*, or *C. Dowiana Rosita*, and which he thought might be a hybrid between *C. Dowiana* and *C. Bowringiana*. He described the flower exactly as seen in Mr. MARON's specimen. The plants being evidently *C. Dowiana*, it was concluded that it would be a form of that species, and the present exhibit proves the fact. M. MARON's plant was very strong, and one pseudo-bulb bore two leaves (First-class Certificate).

Lælio-Cattleya \times *Cassiope major* (*L.-C.* \times *exoniensis* \times *L. pumila* η), from Messrs. JAS. VEITCH & SONS.—The original was flowered by Messrs. VEITCH in 1889, and this is a grand improvement on it. Plant of small growth, flower somewhat resembling *L.-C.* \times *Aphrodite*; light rose with crimson front to the lip (Award of Merit).

Lælio-Cattleya \times *Lucasiana* (*C. labiata flammea* \times *L. tenebrosa*), from HUBERT J. GROGAN, Esq., Worthing.—A grand flower of the *L.-C.* \times *Gottoiana* class, and the best of its section. Flower larger than *L. tenebrosa*, and broader in all its parts; of a uniform bright rose-purple, with dark purple markings on the lip (Award of Merit).

Neobenthamia gracilis, from the Royal Botanic Gardens, Glasnevin, Dublin.—A pretty slender-growing species, bearing terminal beads of pretty white flowers with yellow-spotted centres. Illustrated in the *Gardeners' Chronicle*, December 17, 1898, pp. 430-1 (Botanical Certificate).

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., in the chair; and Messrs. J. H. Veitch, C. Herrin, S. Mortimer, Alex. Dean, J. Wright, H. Eslings, F. Q. Lane, Ed. Beckett, J. Willard, G. Reynolds, Jos. Cheal, and H. Balderson.

MESSRS. J. CARTER & CO., High Holborn, London, exhibited a nice group of *Capsicums* fruiting in pots. There were numerous varieties, some of them with names of a somewhat original description, as Long Yellow, Celestial, Tomato Shape, Sweet Square, Chili, Cayenne, and Ruby King. Some of the names, as will be seen, are descriptive of the shape or colour of the fruits (Silver Banksian Medal).

From Sir WRETTMAN PEARSON's garden at Paddockhurst (gr., Mr. A. B. Wadds), were exhibited ripe fruits of Banana, fine, thick, good-flavoured fruits (Silver Banksian Medal).

Apple Allington Pippin, from Mr. JAS. DOUGLAS, Edenside Nursery, Great Bookham, were awarded a Cultural Commendation, and the same honourable distinction was gained by some specimens of Glout Morceau Pears, exhibited by the Earl of ILCHESTER, Holland House, Kensington (gr., Mr. Dixon).

Some varieties of Canadian Apples were shown by Messrs. H. LANE & SON, Berkhamstead, which included the well-known Ben Davis, &c.

MESSRS. JAS. VEITCH & SONS, Chelsea, exhibited good roots of the following varieties of Carrots:—Model, a thick, short Carrot; James' Intermediate, and Matchless (Vote of Thanks).

MESSRS. H. CANNELL & SONS, Swanley, Kent, again exhibited heads of "Deliance" Cabbage, which now the weather is colder, have assumed a pleasing white appearance. The plants were from seeds sown in July.

Messrs. E. Lee & Co., Maidstone, exhibited an apparatus for the convenient bottling and preserving of fruits by means of steam, instead of boiling in water (Silver Banksian Medal). Some preserved fruits of *Pyrus japonica* were shown by Lord ALDENHAM (gr., Mr. Beckett), a Vote of Thanks being awarded.

Awards.

Celeries.—The following varieties of Celery, shown from the Society's gardens at Chiswick, by the Superintendent, Mr. WRIGHT, were accorded Awards of Merit:—Covent Garden Red, Standard Bearer, Veitch's Early Rose, Bibby's Deliance, Champion, Solid White, and Ivory's Pink. These varieties were referred to on p. 447 in our last issue.

Pear Olivier de Serres.—This is another instance of an old Pear rather tardily obtaining the Society's recognition. It is a good-flavoured fruit, in season until the end of February, and needs no further description. From Sir T. LAWRENCE (gr., Mr. Bain) (Award of Merit).

Potato Dumfries' Model.—Shown from the Society's garden at Chiswick (see p. 447 in last week's issue). (Award of Merit.)

CERTIFICATED CHRYSANTHEMUMS AT THE PARIS EXHIBITION.

DURING the course of the great International Chrysanthemum Show recently held in Paris, it was quite impossible to obtain a list of the awards made by the United Floral Committees of the three Societies which are specially devoted to Chrysanthemums in France, and under whose auspices the whole of the work was carried out.

Being now in possession of the official publications, I am not surprised at the difficulty in obtaining such information, for it appears that seventy-four First and Second-class Certificates were awarded.

It would be optimistic in the highest degree to prophecy that all these varieties are, by virtue of the awards alluded to, bound to become popular. On the contrary, many of them being staged by raisers unknown here in England, will probably never see the light in this country, and even if they did, novelty raising both in England and in our colonies appears to enter into very serious competition with the best products of the leading French growers, so that men less well known stand but little chance here of having their labours appreciated.

At the head of the long list of Certificates comes the name of the eminent Frenchman, M. ERNEST CALVAT, with fifteen awards. In a previous article a mention of what I considered his most promising novelties was made, and these need not be repeated here.

M. AUG. NONIN is placed next, and rightly so, for he is really the only rival that M. Calvat need seriously regard in so far as his trade with English buyers is concerned. Fourteen Certificates were awarded to this exhibitor. In this country the varieties Sado Yacco, M. Emile Deseine, M. Charvet, Fin de Siècle, and Paris 1900, are the most likely to please.

Mr. W. WELLS, of Earlswood, carried off six Certificates for W. B. Church, Lord Ludlow, Madame von André, Khaki, Matthew Smith, and Charles Longley.

M. BONNEFONT follows with seven, but they are mostly Second-class Certificates. Then come M. CHANTNER, M. MOLIN, and M. DE REYDELLET.

In the very handsome group staged by the English National Chrysanthemum Society three First-class Certificates were awarded to the following varieties, viz., Mrs. Barkley, Lily Mountford, and Miss Alice Byron.

Other raisers to whom awards were made included Messrs. VILMORIN, ANDRÉUX & Co., M. LIGER-LIGNEAU, M. LEMAIRE, M. NATROLIN, M. DUBOIS, M. COUSTEILS, and M. BISSON. C. Harman Payne.

BOLTON CHRYSANTHEMUM.

THE officers, committee, and members of the Bolton Horticultural Society held their annual gathering on Saturday night following upon the recent show. The chairman (Mr. R. Smith) said the horticulturists of Bolton had every reason to congratulate themselves upon their efforts to secure for the town one of the finest floral exhibitions held in the country this season. Deep regret was felt by all connected with the Society at the death of the esteemed president (Miss Mabel Cross). Acknowledgments were afterwards paid to the donors of the Cups (Messrs. J. W. Makant, J.P., and Mr. J. H. Hargreaves), and the Secretary (Mr. James Hicks).

DEVON AND EXETER GARDENERS.

THE last lecture of the present session was given by Mr. T. Slade, gr., Poltimore Park, the subject matter being "Souvenir de la Malmaison and Tree Carnations." Mr. Slade said, in dealing with the first-named, that these were neither so useful nor floriferous during the winter as ordinary tree varieties. The plants, after flowering, should be knocked out of their pots, and the balls laid on their sides in such a manner as would admit of the shoots being layered. After being prepared for layering by the ordinary method, light sandy soil should be placed around them to the depth of 4 inches. The plants, before being turned out, should be thoroughly saturated with water, which in a close frame would suffice till roots formed. The plants should, however, be sprinkled daily, and the frames kept close, unless there appeared to be an excess of moisture, in which event a little ventilation must be afforded. Layering in frames, he said,

was preferable to layering in the open border, roots being more freely and readily formed. When the layers were rooted, they should be potted and placed in a cold frame until well established. When the main shoot had grown several inches in height, it should be pinched off, so as to induce side shoots to form; the plants being a little later, that is, when the new breaks form, shifted into 18's or 32's. The shoots should be supported as they come on. Carnations must have pot room if they are to be successfully grown, and a stunted, shabby appearance avoided. The sort of compost recommended consists of a good loam, some leaf-mould, and a small quantity of sharp sand, together with a sprinkling of fresh soot, all being well mixed together. A little mortar-rubble is a useful addition. Stimulants should be sparingly used, so as not to induce flabby grass, which readily falls a prey to diseases and insect pests. Chemical manures should always be applied in water, and soot-water was helpful. Carnation Souvenir de la Malmaison did not require heat, but all the varieties were the better for being grown in a light, cool, airy glass-house or pit. Shading the plants did good during very bright sunshine, and any moisture-holding materials were suitable as a floor upon which to stand them, such as coal-ashes, or fine clean gravel. In bright weather a slight sprinkling overhead or syringing between the pots benefited the plants. When required to bloom out of their normal season, the plants should be grown in batches. The ordinary forms of tree or winter-flowering Carnations should be propagated by cuttings of shoots taken in January and February, and not necessarily at one time, but at intervals of a fortnight or thereabouts. When the young plants are about 6 inches high, the point should be nipped out. A slight degree of bottom-heat is an advantage, and when the plants are well on their way, a shelf near the glass will be found the best place for them until about June, when they may be stood on a coal-ash bed in the open air where, at the least half of the day, they get sunshine. In the autumn the plants should be taken into the green-house for the winter. Mr. Slade preferred to obtain the first crop of flowers in the autumn, and after flowering, to shift the plants into larger pots. One year, or two at the outside, was long enough to keep the plants, as the finest blooms were only to be obtained from young plants. The kind of compost recommended for the Malmaison varieties was equally suitable for these. They were better when grown in a light, well-ventilated house, and should not be jumbled up with other plants if it could be avoided. Mr. Slade exhibited many well-grown and beautiful specimens of the leading varieties of tree Carnations, as well as fine trusses of Pelargoniums, Allamanda, and Clerodendron princeps.

A hearty vote of thanks was awarded at the close of the paper and the discussion which followed. A. H.

READING & DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

DECEMBER 3.—The last meeting of the above Society proved to be one of the most interesting of the whole session. The Committee had arranged a new departure from their ordinary proceedings. Six subjects were selected, and a number given to six members in the room. The Chairman then called out one of the subjects, and asked that the member holding a certain number should speak upon the subject mentioned. Although in some instances the speakers found a difficulty to fill up the time allowed, and caused a certain amount of amusement, yet the animated discussion which followed brought out many practical and valuable hints on the culture of the following:—Mignonette in pots, Peas for early use, Strawberries, Zonals for winter flowering, and Gooseberries. The speakers were Messrs. R. Chamberlain, F. Alexander, E. S. Pigg, W. Burditt, and F. Lever respectively, whilst Blake, Cretchley, Townsend, the President, and others, took part in the discussion.

The exhibits were of good quality. Mr. R. CHAMBERLAIN, gr., Cressingham, staged twelve dishes of desert Apples; Mr. F. LEVER, gr., Hillside, a batch of Begonia Gloire de Lorraine; and Mr. C. P. CRETCHLEY, gr., The Honays, Twyford, a specimen plant of Begonia Gloire de Lorraine.

VEGETABLE CULTURE.—This was the title of a paper read by Mr. J. GIBSON, gr. at Danesfield, Marlow, before the members of this Association on Monday last week. The kinds of vegetables dealt with were Potatoes, Peas, Beans, Cabbages, Cauliflowers, Kale, Broccoli, Onions, Celery, Leeks, Parsnips, Beetroots, Carrots, and Tomatoes. Mr. Gibson showed a collection of very fine produce to illustrate his paper. A general discussion followed the reading of the paper.

Mr. F. LEVER, gr., Hillside, gained an Award of Cultural Merit for a number of plants of *Primula sinensis* var. stellata, and P. obconica; Mr. G. SMITH, gr., Cintra Lodge, showed fine inflorescences of Calanthes; and Mr. R. CHAMBERLAIN, gr., Cressingham, new Red Intermediate Carrots.

A hearty vote of thanks was accorded to Mr. Gibson for his useful and instructive lecture, in proposing which the President (Mr. C. B. STEVENS) referred to the necessity of young gardeners making themselves acquainted not only with gardening operations in glasshouses, but with all the operations carried out in the kitchen garden.

LINNEAN.

DECEMBER 6.—Mr. F. D. GODMAN, F.R.S., Vice-President, in the Chair.

Dr. A. B. RENDLE, F.L.S., exhibited specimens, including leaves and fruit, of Grasswack (*Zostera marina*, L.), recently found by Capt. H. P. Deasy, near Yepal Ungar, in the Kwen

Lun Mountains, at an altitude of 16,500 feet. The plants were not growing in this remarkable locality, but were preserved in a bed 10 to 12 feet thick on top of and interspersed with which were strata of blue clay. The broken leaves and sheaths of which the specimens consisted were dry and brittle, but showed no alteration, the internal structure being as perfect as in the fresh plant. As the country is geologically unknown, it is impossible to estimate the age of the deposit. It probably formed the bed of a salt-lake. There is one in the neighbourhood; and Capt. Deasy is of opinion that the whole district formed at one time a large salt-lake. The specimens were very dusty, but microscopic examination of the dust revealed nothing beyond particles of sand and a few small brown objects, apparently spores of some kind. Capt. Deasy states that he saw similar growths in a lake in the same district, but was unable to procure specimens. This occurrence of *Zostera marina* in the heart of the Asiatic continent, and at so great an elevation, is of special interest. The plant, so far as known, is purely marine, occurring plentifully on our own coasts, and throughout Europe, on the Atlantic shores of North America, and in North-east Asia. It has not previously been recorded from an inland lake, though an allied species, *Zostera nana*, L., occurs in the Caspian. Whether its existence in the Kwen Lun range has any relation to the Tertiary marine deposits which connect the Mediterranean area with the Himalayas is matter for conjecture. These seems to be some evidence for the existence of *Zostera* in Upper Cretaceous and Tertiary times; at any rate several species have been described from fossils resembling the rhizome of the plant, found in Central European beds.

Mr. F. CHAPMAN, A.L.S., read a paper on "Some New Foraminifera from Funafuti," on which some remarks were made by Mr. Sherborne.

Mr. H. GROVES, F.L.S., on behalf of Mr. G. C. Druce, communicated a paper entitled "A Revision of the British Thrifts" (Statice and Armeria), in which he attempted a rectification of the synonymy, and discussed the value of the pubescence on the ribs of the calyx as a distinguishing character.

BECKENHAM HORTICULTURAL.

DECEMBER 7.—On the above date, in the Society's Library and Reading Room, Mr. J. Weathers gave a lecture on "Horticultural and Botanical Books." Considering the vast amount of horticultural literature, only good standard works could be considered in so short a space of time as that occupied by one lecture. Plant Physiology, Natural History, Classification, Botany, Fertilisation, Soils and Manures, Landscape Gardening, Hardy Plants, Ferns, Bamboos, Conifers, also various works on special subjects, were carefully reviewed. Mr. Weathers said good works on fruit culture were not so plentiful in this country as in France and Germany, yet no one could do wrong in carefully reading Wright's *Pitheca*, also *Fruit growers Guide*, *Hogg's Manual*, or any of the handbooks published by some of the large fruit-growers. A book entitled *The Vegetable Garden* was recommended as giving English and French ideas. The works of Drs. Marshall Ward and Griffiths, and Miss Ormerod, were considered best in regard to diseases of plants and insect pests. The lecturer praised the collection of works the Society possessed, and spoke of the advantages accruing to members of being able to refer to costly standard works, and to works on special subjects, and to the opportunity a good library and current garden literature afforded of being posted up on all matters relating to horticulture. Mr. Weathers was heartily thanked for his able and interesting discourse.

CHESTER PAXTON.

DECEMBER 8.—The annual general meeting was held in the Grosvenor Museum on the above date, under the presidency of Mr. Robert Wakefield.

The Honorary Secretary, Mr. G. P. Miln, in submitting the annual report and financial statement for the past year, explained that not only had the membership increased, but several new subscribers to the prize fund had been secured, and the Society was now stronger in every respect than in any previous year.

Mr. Wakefield was heartily thanked for his services as President during this year; and Mr. N. F. Barnes, head ardenier to the Duke of Westminster, was unanimously elected to this office for the ensuing year.

Mr. G. P. Miln was strongly urged to continue the Secretaryship, and the following officers and committee were afterwards elected:—Vice-Presidents, Messrs. E. Stubbs and A. Ellams; Consulting Naturalist, Mr. R. Newstead, F.E.S.; Members of Committee, Messrs. J. D. Siddall, R. Wakefield, Thomas Weaver, John Taylor, John Weaver, A. W. Armstrong, A. E. Goodman, W. Pringle, H. Rowe, H. Pierce, J. Jackson, C. Flack, John Dutton, S. Garner, John Wynne, J. Ryder, John Breen, and S. May.

It was decided to hold the next annual exhibition of fruits and Chrysanthemums on November 12 and 13, 1901.

NATIONAL DAHLIA.

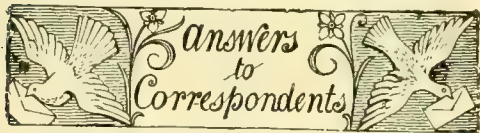
DECEMBER 18.—This is the season when the special horticultural societies wind up their affairs for the year and the National Dahlia Society followed close on the heels of the National Rose Society by holding a meeting of its committee at the Horticultural Club on the above date at 2 P.M., the President, Mr. E. Mawley, occupying the Chair.

It must be admitted that the Dahlia growers always answer well to the call of duty, for Mr. J. Walker was there from Thame, Mr. J. Cheal from Crawley, Mr. H. Turner from Slough, Mr. G. Humphries from Chippenham, Mr. J. Burrell from Cambridge, Mr. M. V. Seale, from Sevenoaks, Mr. J. T. West from Brentwood. With such leading amateurs as Messrs. F. W. Sharp, H. A. Needs, and others, evidently there is a determination to keep the Dahlia before the public as an exhibition flower. The draft report read by the Secretary, Mr. J. F. Hudson, set forth that the members could be congratulated upon the fact that the exhibition held on September 7 and 8, was the largest in the history of the Society, the number of entries were 390, quite twenty per cent. more than at any previous show, and some details of the types were given. The large show and fancy Dahlias suffered severely from the drought of the summer, which, as the Chairman later pointed out, had extended over four seasons. Certain changes had been introduced into the schedule one being a class for sixty blooms of Cactus Dahlias set up with Pahlia foliage; this brought a good competition, and appeared to be popular. The class for twelve vases, each containing six blooms of Cactus Dahlias, was also popular, and brought a number of excellent exhibits.

A number of Certificates were awarded to new varieties at the Crystal Palace. Attention was called to a meeting held at the Drill Hall for granting Certificates to new varieties, when fourteen novelties were so distinguished. A fund, known as the Girdlestone Memorial Fund, to provide some memorial of the late president, had been established, and nearly the whole of the sum required to institute a Medal had been obtained. The scheme for affiliating Dahlia societies had been put into operation, the first to join being the Boston Dahlia Society.

The financial statement furnished by the Treasurer, Mr. C. E. WILKINS, showed, that when all the assets had been realised, there was a small balance in favour of the Society. The Treasurer enforced the necessity of obtaining new subscribers, and also special prize donors. The list of Patrons and Patronness was passed without addition; Mr. E. MAWLEY was nominated for re-election as President; Mr. C. E. WILKINS as Treasurer; Mr. J. F. HUDSON, M.A., as Secretary; and Mr. H. TURNER as Auditor. The list of the Committee was revised, and under the head of arrangements with the Crystal Palace, it was suggested that, subject to the approval of the Directors, the show in 1901 should be for one day only, and be held on September 7. A desire was expressed that a meeting of the Committee should be held at the Drill Hall in September next, for the purpose of awarding certificates to new varieties.

It is intended to hold the General Annual Meeting on Tuesday, January 8, 1901.



ALLAMANDA: *Anxious.* Your leaves are attacked with a mould, a species of Botrytis. Spraying with a solution of liver of sulphur, $\frac{1}{2}$ oz. to a gallon of water, might do good.

BEGONIAS: *Anxious.* There is no fungus, but the leaves appear to have been attacked by the mite which causes rust. Dip the plants in tobacco water.

BOOKS: *W. Young.* *Vines and Vine Culture*, by A. F. Barron, 13, Sutton Court Road, Chiswick. Manuals on the cultivation and forcing of the Peach, Cherry, Plum, Orange, &c., can be purchased of Mr. Upcott Gill, at the Bazaar Office, 170, Strand, W.C., for 1s. or 1s. 6d. apiece. *Thomson's Gardeners' Assistant*, published by Blackie & Son, 17, Stanhope Street, Glasgow, about which you enquire, is being issued in parts at the present time, and it contains full instructions on all kinds of fruit culture under glass. Messrs. T. Rivers & Sons, nurserymen, Sawbridgeworth, have published several editions of *The Orchard-House*, a very useful guide to the cultivation of hardy fruits in cold houses.

ELECTRICALLY v. STEAM-DRIVEN MOWING MACHINES: *Chad.* Unless you have electrical power handy for the recharging of the batteries, or can transmit power along the tracks taken by the mower, you will be better served by steam power. A steam mower was illustrated in these pages on March 26, 1896—Vol. XIX., p. 401.

FERTILISATION: *J.* Hybridisation is cross-fertilisation, but cross-fertilisation is not necessarily hybridisation. The latter term is reserved for the crossing of two reputed species.

FRESH FLOWERS OBTAINABLE AT COVENT GARDEN MARKET ON MONDAY, DECEMBER 24: *W. C.* The market will be well supplied as usual, and there will be no difficulty in getting that which you require.

FUMIGATING MATERIAL: *A. B. C.* If you have used the mixture stated, and it has not injured other plants, it would not be at all likely to affect Bananas in fruit.

FUNGUS: *G. S.* The dry-rot fungus.

GARDENIAS FAILING TO FLOWER AND DYING OFF: *P. Hampton.* The plant sent had roots that were thoroughly infested with eel-worms. The creatures are imported with the soil, and increase prodigiously under the favourable conditions found in a warm plant-house. We are unaware of any remedy that will kill them, that will not likewise kill the plants. One efficient safeguard is to stack the soil two years before using it, keeping the stack meanwhile quite free from herbage, a sort of treatment that kills by starvation. Small quantities of soil might be rendered free of them by pouring boiling-water over it, or by desiccation (not charring) on sheets of iron over a fire. Cucumbers and Melons are frequently ruined by eel-worms, and great loss inflicted on the cultivator.

HARDY PERENNIAL PLANTS WITH BRIGHT COLOURS FOR FILLING A BORDER IN A COLD, DAMP LOCALITY: *E. S.* You will find the following suitable to the locality, and afford blossoms from spring to the end of the autumn:—*Acanthus mollis*, *Aconitum napellus*, *Anemone japonica*, *A. j.* in variety, *Campanula latifolia*, *C. persicifolia*, *Delphinium cardinale* and hybrid varieties, *Doronicum plantagineum*, *Echinops Ritro*, *Helianthemum autumnale*, *Inula glandulosa*, *Lathyrus latifolius*, and *L. l. albus*, *Lychnis chalcidonica*, *Meconopsis Wallichii*, *Monarda fistulosa*, *Papaver orientale*, *P. o. var. bracteatum*, *Pentstemon barbatus*, *Phlox decussata* and hybrid varieties, *Physelius capensis*, *Sidalcea malvaeflora*, *Spiraea Aruncus*, *Kniphofias* in variety, *Verbascum olympicum*, all of the above grow to 3 or more feet in height. *Anemone hortensis* var. *fulgens*, *Aquilegia chrysantha* and *A. cerulea*, *Centaurea purpurea*, *Dicentra eximia*, *D. spectabilis*, *Dictamnus fraxinella*, *Erodium Manescavi*, *Funkia ovata*, *F. Sieboldii*, *Gaillardia aristata*, *G. grandiflora*, *Gentiana asclepiadea*, *Geum chiloense*, *Helenium pumilum*, *Hemerocallis aurantiaca* and other species, *Heuchera sanguinea*, *Incarvillea Delavayi*, *Lobelia cardinalis*, *Lychnis Haageana*, *L. vespertina* fl.-pl., *L. viscaria splendens*, *Morina longiflora*, garden varieties of *Pæonia*, *Rudbeckia speciosa*, *Scabiosa caucasica*, *Sedum spectabile*, *Spiraea astilboides*, *Statice Limonium*, *S. latifolia*, *Trollius asiaticus*, the above grow from 1 to 3 feet in height. *Adonis amurensis*, *Alyssum saxatile*, *Anemone blanda*, *A. coronaria*, *A. palmata*, *A. Pulsatilla*, *Arabis alba*, *Armeria alpina*, *Arnebia echioides*, *Aubrietia* in variety, *Cardamine pratensis*, *Cheiranthus Marshalli*, *Dianthus Atkinsoni*, *D. barbatus*, *D. chinensis* vars., *D. plumarius*, &c., *Gentiana acaulis*, *Geranium sanguineum*, *Helleborus niger* vars., *Phlox amœna*, *P. reptans*, *Polygonum affine*, *Silene Schafta*, &c., grow to less than 1 foot in height. The following bulbous and tuberous-rooted plants would serve, viz., *Allium neapolitanum*, *Anthericum Liliastrium*, *Bulbocodium vernum*, *Chionodoxas* in vars., *Colchicums* in vars., *Crocus* sp. and vars., *Eranthis hyemalis*, *Galanthus* of species, *Iris germanica*, *I. xiphoides*, *I. xiphium*, *Narcissus* in var., *Tulips* in var., *Lilies*, *Asphodels*, *Tigridias*, &c.

INSECTS: *H. W.* The insect was smashed. It looks like the Wood leopard-moth—*Zeuzera Esculi*.

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can consistently with our editorial work, but as the naming entails much labour and considerable cost, we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. De'lay is often unavoidable.—*G. M.* Your fruits were carefully selected and well packed; it is a pleasant task to determine such specimens. We are glad to be able to help you and all others who will observe the rules and take ordinary care. 1, Dr. Harvey; 2, Winter Quoining; 3, Calville Rouge de Micoind; 4, Graham (also known as Kentish Deux Ans); 5, Lane's Prince Albert; 6, Colmar Van Mons.—

W. N. Beurré d'Arenberg.—*H. S. S.* 1, Cobham; 2, Golden Reinette; 3, Ribston Pearmain; 4, Cockle Pippin; 5, Pitmaston Golden Wreath; 6, Ord's Apple.—*W. J. W.* The specimens were not good examples, and seem to have been gathered too early, as they were much shrivelled. 1, Swan's Egg; 2, Besi Quessoy; 3, Beurré Allard; 4, Ambrette d'Hiver; 5, rotten; 6, Gaudry.—*D. J. H.* 1, Beurré Copretz; 2, unknown; 3, Beurré d'Anjou; 4, a small example of Beurré Delfosse; 5, Hubbard's Pearmain; 6, Crassane.—*W. J. S. B.* The remainder of your fruits are: 6, Amadotte; 7, Golden Pearmain; 8, Court of Wick; 9, Scarlet Pearmain; 10, Fondante de Charneu.—*H.* Your Pear was not in good condition for determining, but it very closely resembles a continental variety known to French pomologists as Poire d'Aigue. It is also known locally in some districts as Coudaigre. It is distinct in form, but is usually of little merit.—*F. B.* 1, Beurré Sterckmaus; 2, Beurré Duval; 3, Camille de Rohan; 4, Belle Isle d'Angers; 5, Margil.—*W. H. C., Surrey.* The labels were not secured to the fruits, and became mixed, so that we cannot indicate the Pears. The large greenish-yellow Apple is Alfriston; the flatter red one Mère de Ménage.—*B. P.* 1, Winter Quoining; 2, Fearn's Pippin; 3, Selwood's Reinette; 4, Minchull Crab; 5, Ribston Pearmain; 6, shrivelled beyond recognition.—*E. L.* 1, Henriette; 2, Besi de Quessoy; 4, Dr. Harvey; 5, Reinette Verte.—*Amateur.* All the Pears except two varieties were rotten when received at this office. The two in sound condition were: 6, Colmar Van Mons; and 7, Bergamotte Thouin.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*J. E. H.* 1, Epiphyllum truncatum; 2, Polypodium aureum; 3, Pteris cretica albo-lineata; 4, Pteris serrulata cristata; 5, Pteris cretica; 6, Pteris serrulata, fertile frond; 7, Ophiopogon Jaburan variegatum.—*S. Russell.* 1, Didymochlaena humilata; 2, Lastrea lepidota; 3, Asplenium fœniculaceum; 4, Pteris longifolia; 5, Gymnogramma ochracea; 6, Cyrtomium falcatum.—*M. S.* Crassula lactea.—*F. J.* Epidendrum ciliare.—*A. B.* The hybrid between *Lælia cinnabarina* and *Cattleya intermedia* is pretty. It is near to *L. C. x intermedio-flava*.—*E. O.* 1, Maranta picta; 2, Acalypha Macfeeana; 3, not recognised; 4, Euphorbia jacquiniæflora; 5, Hibiscus rosa-sinensis variegata; 6, Sparmannia africana; 7, Nerium Oleander; 8, Kalosanthe sps.—*W. W.* Richardia albo-maculata.

OLD VOLUMES OF THE "GARDENERS' CHRONICLE": *H. B. D.* The price is what you can obtain. We have heard of twenty year's volumes, in good binding and clean, going for 10s. per year—a price that hardly covers the cost of binding. On the other hand, we have heard of £90 being given for a complete set.

ORCHID SEED: *L. S. B.* The seeds you send are barren; they have not been fertilised. Out of so large a number, it is possible a few may be perfect. You might sow some on the chance, but we do not think you will have any success.

RICHARDIA: *J. C. T.* This may be due to bacteria, but is still under observation. If you can send us some more of the diseased roots, it would facilitate our investigations.

SMOKELESS COAL: *H. H.* Anthracite or best steam (Welsh), but the draught must be very good or combustion will be imperfect and slow. Quick draught can usually be obtained by making a tall chimney and adapting the boiler to the needs of the coal used. A tubular, or an erect cylinder fed from the top, or the "Cannon" boiler might answer.

COMMUNICATIONS RECEIVED.—*M. Smith* Attwood & Binsted—*R. G.* F. B.—*C. A.* Crafen.—*A. H.*—*C. Mason.*—*E. B.*—*G. S.*—*G. P.*—*R. M. H.*—*J. C.*—*Jules Gravereau*—*H. Cannell*—*F. W. B.*—*Herb & Wulle*—*A. J.*—*J. M.*—*H. W.*—*G. W.*—*G. S.*—*S. W. F.*—*J. C.*—*M. H.*—*Dr. B.*—*T. E.*—*H.*—*G. S.*—*A. W.*—*P. McO.*, Cape Town—*Sir G. B.*—*M. S.*—*J. C. Fraser-Lee & Co.*—*J. F.*—*J. W. T.*—*W. G.*—*A. H.*—*P. W.*—*T. N.*—*H. T. M.*—*E. Burbury*—*W. H. Y.*—*A. W.*—*J. E.*—*A. P.*—*W. J. B.*—*H. J. C.*—*D. & W. B.*—*C. H.*—*J. D.*—*C. T. D.*—*R. D.*—*J. O. B.*—*D. R. W.*—*A. W. G.*—*D. T. F.*—*G. H.*—*A. Countryman*—*J. E. J.*—*Harrow*—*C. M.*—*J. Mayne*—*Harrison Weir*—*Chad.*

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—*S. G. W.*—*H. C.*

(For Markets and Weather, see p. viii.)



THE

Gardeners' Chronicle

No. 731.—SATURDAY, DEC. 29, 1900.

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OUR KAILYARD.

FIRST of all let me say just a very little anent what it was, and what it is. Though old enough to have portions of its brick walls grey and brown with mosses and lichens, and with, in many places, Snapdragon, Wandering Sailor, Origany, Wallrue, usurping Ivy, and vagabond vegetation of many other kinds growing out of the chinks, it is yet by no means ancient, being still a number of years off its bicentenary. It superseded a very old-fashioned garden, which was in close proximity to a parterre formed beneath the windows of the big house, and near to a grove now quite forgotten. Then, after "wildernesses" had been introduced from the south by the Earl of Mar, it was decided that a brand new one should be laid out to the west of the old kailyard; but all these were swept away to make room for pleasure grounds and gardens on a great scale, and glad as we should have been to have had any part of the old arrangement left, not a trace of it remains. How often in gardening have we cause to exclaim, *O tempora, O mores!* Even of the new garden little of the original now remains beyond the soil and the mere skeleton of the walls, and some of the old floors with their great rough iron hinges and locks curiously encased in wood. Of arboreal vegetation there still survives an old Robinia,

an Apple-tree, and the remains, mostly mere stumps, of a Holly-hedge that shut in the garden from the outside world. The walks originally were bordered by espalier Apple and Pear-trees planted at a distance of 3 feet from the walk, and these remained for a period of eighty or ninety years, and were replaced by bush-trained trees of the same fruits, but set further back from the walks. The intervening spaces were cropped with vegetables, and the middle borders were devoted to flowers; and at one time they swallowed annually their thousands of Verbena and Calceolaria plants. In later times many changes have been made: borders have been still further widened, so as to secure greater space for flowering-plants; vegetables have been excluded altogether from all land that borders the walks; hedges of Roses have been planted; gravel-walks converted into turf; coronary and other gardens formed; and part of the ground laid out in little orchards on grass, with bulbs to flower when the trees are white and pink with blossom. Outside the walls, space has been made for a herb-garden, a bulb-garden, bog-garden, shrub-garden, and rockery, so that our kailyard may truly be said to comprise in itself an epitome of gardening. I venture to say in many ways it differs from other gardens, but that, I think, is not a matter for regret, because a garden loses nothing of its sweet delightfulness through being endowed with special characteristics.

But even a garden with characteristics has not in the depth of winter much to interest anyone, except to those who are acquainted with it at other seasons. In kailyards Christmas Roses do not, as a rule, flower till some weeks later than Dec. 25, though the variety called *Helleborus angustifolius* welcomes the New Year with Roses pure and cold as snow. I have much regretted that the true Christmas Rose, which some think to be *Melampode*—

"My seely sheepe like wel belowe,
They needs not Melampode,"

has done very badly for some years back, owing to the ravages of a fungus, which attacks the foliage in the summer. I see that the great Christmas Rose has also been attacked, and dread what the result will be if the fungus cannot be extirpated. Fortunately, it does not attack the many varieties of Lenten Lilies, of which there is always plenty to be had in season. To "mak siccar," I have taken the precaution of planting a quantity close to the base of a wall, where ripening timeously they afford bloom correspondingly early. The value of the flowers is greatest when they are employed low down in table decorations, and though under ordinary conditions the stalk and flowers, when cut, become rapidly flaccid, by steeping them in water a few hours previous to using, they do not wither in the least.

I forgot to mention—as an original tree of the place—a very aged specimen of the Glastonbury Thorn, which grows just outside the garden. Its legendary history as a variety, as well as its connection with Joseph of Arimathea, are fairly well known, and this particular example, though it does not produce blossoms at Christmas, yet does so sometimes, early enough to afford a proof that the old story was not without some foundation; in fact, many curious beliefs have been entertained of "thorns" in general, which do not, it may be explained, alway mean the White Thorn in particular. Maundeville, it will be remembered, when writing of the Holy Land, mentions no fewer than four sorts as having been

made to contribute material for as many crowns on the night of the Saviour's Passion. First, there was a crown of Albespyne or White Thorn, which was replaced by another of Barberry, that again by one of Egplantine, and last of all by one composed of "Rushes," or "Jonkes of the Sea." If really a Rush, it has been thought that *Juncus acutus* most nearly meets the case; but there are difficulties in the way of accepting this as the plant. As for instance, it was the species chosen for strewing the floors of chambers, a proof that its prickles were incapable of inflicting pain; and the further fact that all the other plants ever mentioned in this connection have been such as would produce pain of an excruciating character. By assigning to the "Jonc marin" of the French (*Ulex europæa*), the questionable honour of having provided material for the fourth crown, these difficulties disappear. Half of the crown was preserved as a relic of great value in the church of St. Chapelle in Paris, and Evelyn names *Paliurus aculeatus* as the plant of which it was composed; but Evelyn gives us the idea that he did not himself inspect the relic, though he mentions having visited the church. Moreover it was only towards the end of the sixteenth century that the *Paliurus* is first named as a likely plant. In our border are varieties of the Whin, one very dwarf, and a so-called double-flowered variety. The Whin often flowers in January, and it is one of those accommodating plants which, when the flowering shoots are removed from the plant and placed in water, the blooms open more kindly than if left on the plant.

It seems somewhat against the course of Nature to find plants making growth in the open air at this season. One such is *Iris susiana*, an old plant that has long exercised the ingenuity of gardeners to cultivate and flower successfully; and there are a few species of *Arum*, of which *A. sanctum* is the most interesting. The common white Lily, *L. candidum*, differs somewhat from these, inasmuch as growth appears to be partially suspended in winter, at which season the roots may be lifted and transplanted with safety. This is a fact which I learned through one of those mistakes that occur so frequently in gardens: a garden workman sent to lift some other plants having lifted two large groups of this Lily before it was noticed that a mistake was being made. But not the least remarkable fact in connection with these Lilies is that they grew and flowered well, and were the only ones which that year were not spoiled by disease.

Altogether different from these is the pretty little golden Saxifrage, an irrepressible mite of a thing, that loves to find itself in a sheltered nook beside some babbling streamlet, but which can also make itself at home in a garden, where it grows the winter through, even under the snow, and oftentimes favours us with a glimpse of its brilliant little flowers quite early in the year.

Then there is a shrub, *Nuttallia cerasiformis*, largely addicted to leaf-making in January. In California it flowers before it produces foliage; but in this country the shoots are clothed with foliage long before its currant-like, drooping white flowers appear.

It is a great virtue in a kailyard at all times not to be too hurried, and specially so at this season, when the soil is cold and wet, and therefore not in a fit condition for the sowing of seeds. And so it not infrequently happens that those who can wait patiently are not by any means the hindmost by-and-by. B.

HAZARDIA DETONSA.

HAZARDIA is a genus of Asteroid Composites, established in 1887, and named in compliment to Mr. Barclay Hazard, of Santa Barbara. It comprises three species of stout, tomentose, deciduous shrubs, with terminal, cymose, panicles of cone-shaped flower-heads, and they are natives of the islands lying off the Californian coast. *H. detonsa* has obovate, oblong leaves, 3 to 5 inches long, covered, as also are the stems, with white tomentum. It forms a shrub 3 feet to 4 feet in height, and is common on rocky places on Santa Cruz Island. It was introduced by Kew four years ago, and flowered for the first time in the temperate-house in the late summer months of the present year. It has also flowered in Mr. Gumbleton's garden at Queenstown, the accompanying illustration (fig. 155) being taken from a portion of the plant kindly sent by him. Its only claim to the notice of horticulturists is on account of its silvery, silky foliage, which suggests that of the *Centaureas*.

NOTICES OF BOOKS.

THE BEST HERBACEOUS PLANTS.*

FOR the lover of these plants, as well as for men who grow them for business, the publication of the above mentioned work will be of considerable value, especially as there exists no similar book that may be placed aside of it. The whole work is divided into parts, which are published consecutively, and consist of four water-colour plates, with a sheet of text affixed to each of them. The subjects chosen for these plates are the recognised best kinds of herbaceous plants known in gardens, and the execution of the plates is one that deserves special mention. Turning over the pages, we find a good many things grown in quantities for the trade; our attention, however, is most occupied with those objects that the writers recommend for more extensive cultivation. They are more recent hybrids or varieties of commendable merit, either as regards profusion of flowers, their time of lasting, or the size of them. We also must allude to the magnificence and intensity of colour of some of them.

The text accompanying the plates is written by practical men, who have had the plants under observation, and studied their habits. The cultural hints they give will specially be appreciated by amateurs. Soil, the various positions which suit the plants best, their habit that confers value for cutting, bedding, or for other purposes, in landscape gardening, and the forcing of some kinds, are spoken of in a very lucid manner.

A translation into several European languages is going forward at present, and we entertain no doubt that it will be translated into English when it becomes known. At present the publishers have arranged for twelve parts at 11d. each; it is, however probable that more will be issued. *E. B. B., Berlin.*

LE CHRYSANTHÈME, HISTOIRE ET CULTURE.

Par J. Lochot.

SOME time has elapsed since we last noticed a new French book on the Chrysanthemum. In the interval, however, several small pamphlets have appeared, but they have been quite unimportant additions to the literature of the flower. The little manual now before us is published by the Horticultural Library of *Le Jardin* in Paris. It is freely illustrated as such things go, and fairly well got up in style; but it hardly justifies its full title. Little or nothing is given about the history of the flower. In fact, these details are exceedingly meagre, and occupy less than half a page out of more than 120. So many authors have attributed the introduction of the large-flowering Chrysanthemum to Blanchard, as does M. Lochot in his work

now under notice, that we feel it necessary to point out the fact that this was due to Pierre Louis Blanchard. It is curious how the Blanchard blunder is constantly being repeated. The cultural matter

bloom culture, earlies, standards, grafting, seedlings, and many other subjects fall in for a fair share of the author's attention. A comprehensive alphabetical list of the best varieties brings the



FIG. 155.—HAZARDIA DETONSA.

occupies the bulk of the volume, being dealt with in a series of short headings, which are far too numerous to mention, and it must suffice to say that cuttings, disbudding, liquid-manuring, big-

book to a close. This gives raisers' names and dates in the majority of cases, besides descriptions. A note as to the bud to be taken is also supplied. *C. H. P.*

* The best Herbaceous Plants for Cutting and for the Garden, by Herdoffer, Köhler, and Rudel. (Publisher, Gustav Schmidt, Berlin, W. 35.)

PLANT SANITATION.

MR. CARRUTHERS, in a lecture given in Ceylon, commenced by saying that sanitation was recognised in human medicine and with animals, but was not yet realised with regard to plants. People recognised that dead bodies should not be left lying about, and he wished to impress on them the necessity of observing the same rules in the case of plants as applied to animals. Plant diseases could be arranged in three or four groups. First, diseases due to environment, i.e., such as were due to want of moisture, or excess of moisture, and due to too high or too low a temperature; these were neither contagious nor infectious. There were diseases caused by large animals as well as insects, such as the damage done by squirrels, helopeltis, red spider, &c. There was a more important disease in view of plant sanitation due to the tax of fungi and bacteria, and it was against these they had to try and use sanitary measures, as they were nearly all contagious or infectious. The lecturer went on to say that fungi were divided into two groups, viz., parasitic and saprophytic. Saprophytic fungi grow only on dead organic matter,

as whitish, with yellow or pink tint masses coming through the bark. The lecturer then showed pictures of the canker. Inside those masses were found, if magnified with a microscope, spores of two kinds, and those spores, if they lighted on any other Cacao-tree, and in the presence of moisture, would cause a second patch of canker. The only thing necessary for the germination of those spores were heat and moisture. There was always sufficient heat in Ceylon, and during a good many months of the year there was sufficient moisture. The first spore was more or less egg-shaped, and the size could best be understood by saying that a layer of five millions covered a ten-cent piece. Almost simultaneously, or a little later, there were formed a larger spore, crescent-shaped, having five divisions.

He then explained how the spores began to grow in presence of moisture. After these white masses had been formed, a careful observer would see some minute red bodies forced through the white masses, but that did not occur until the portion of the Cacao-tree was dead. Those red bodies, each about the size of a pin's head, were seen in clusters containing another form of the

of that measure. The lecturer then mentioned an instance of a small native holding not far from Kandy, which he visited recently on his way to an estate. He went to the holding, and on examination found over 100 dead trees covered from top to bottom with spores, many others dying, and the whole place practically a spore farm. Unfortunately there was no ordinance in Ceylon to compel owners to reduce danger of infection, and it would be a matter of importance to planters to consider whether they could not arrange some means of getting such spore farms treated on sanitary principles. "*The Tropical Agriculturist*."

BARK-CLEANING.

To judge by the appearance of the fruit-trees in most gardens and orchards, few people seem to realise the advantage of keeping the stems of trees clean, instead of having them covered with lichen, moss, and green slime. Not only is this latter condition detrimental to the health of the trees by keeping the air from the bark, but it supplies a refuge and harbourage for all manner of insect pests. The stems of old Apple and Pear-trees, especially, become much cracked and fissured, and in the crevices many minute insects, their chrysalides and eggs, can shelter, and endure a considerable amount of frost, while secure from the depredations of birds; and then when spring arrives, and the buds, which are to supply them with food, begin to burst, or even swell, forth they go and begin their ravages. This is notably the case with the Apple-blossom weevil, which lives through the winter in the crevices of the bark, and goes forth early in the spring and lays its eggs in the still unexpanded flower-buds; and then when the bloom opens, the weevil larva has already done sufficient damage to cause the bloom to turn brown and shrivel up. From this one instance alone, though many others might be mentioned, it will be seen how desirable, and in some cases absolutely necessary, it is to clean the bark of fruit-trees every year.

There are two ways of doing this. When there are only a few trees which need treating with any solution, it always seems a great bother and expenditure of time and energy to go to all the trouble and expense of preparing solution, to which has to be added the application of it. In this case there is an alternative which is very useful, though perhaps not so thoroughly effectual. The Board of Agriculture, in one of their leaflets on Apple pests, recommend a bark scraper—an inexpensive iron instrument with a blunt edge. A cloth having been spread on the ground round the trunk of the tree to be operated upon, the main stem and some of the bigger branches can be scraped, and the proceeds taken up and burned. This would remove a great deal of rough and useless bark with the attached lichen and moss, and most of the grubs hiding amongst them. To go over the main branches, even, of a big tree, would take rather a long time, and of course the clefts where branches join could not be cleaned out in this fashion; but as a rule it is only the main-trunk, and two or three of the oldest, and biggest branches which are in any great need of such a process, the more recent growth being smooth and shiny.

The other and more thorough method consists in spraying the trees with a caustic solution, which will not damage the tree if properly applied at the right time, but will yet destroy all the moss, and lichen, as well as the eggs of many moths, red spider, aphides, and many other insect pests. It must be done before the buds begin to open in the spring, and the solution must be applied with a syringe or other engine producing a fine spray; otherwise the liquid is wasted, and possibly damage done to the leaves of things growing under the trees, whether grass, Gooseberries or Rhubarb, as the same material which destroys moss will also destroy other green plants. To make this solution put a pound of ground caustic soda (Greenband's 98 per cent.) in half-a-pail of water, and when



FIG. 156.—PARSNIP, CANNELL'S MATCHLESS: A SELECTION FROM "HOLLOW CROWN."

(Shown at the Royal Horticultural Society's Meeting, December 4, 1900.)

and were not so interesting to the practical man, as they did no damage to cultivated plants. The parasitic fungi were most important to cultivators, as they caused much damage, and were fatal to cultivated plants. He then went on to say, that of the parasitic fungi one that interested them most in Ceylon was the Cacao canker, which he explained to the meeting by means of pictures. With Cacao canker, as in other fungi, when the planter first observed it and wrote to him (the lecturer) or any other worker, saying that the disease had just broken out, it had probably been in the tissues of the plant for months or perhaps years. The way the planter generally noticed it was by the production of the fruits of the fungus, but that only meant that the fungus had been in the bark a long time before producing its spores, just as a flowering plant grew some time before producing its fruit. It was very important for planters to learn to recognise this in their earliest stages. The Cacao canker could be recognised in its earliest stages by the discoloration of the bark and cambium. The colours were different, from a yellowish tint to dark claret colour. This discoloration was due to the presence in the tissues of the spawn or mycelium of the fungus-nectria. His experience had shown him that when this spawn had been in the tissues for some varying time, from ten days to a year, the spores were produced, and they were to be noticed

fungus. On opening one of the red bodies, he said, there would be found a number of transparent bags or sacks, each containing eight spores, technically called ascospores; while the spores previously mentioned were called gonidia spores. The ascospores were fitted to carry the fungus over a period of drought, and it was probable that they could remain without growing, yet retaining their vitality for months, probably years. The gonidia spores were fitted to quickly spread the fungus while damp conditions prevailed. Unfortunately this fungus did not live only in the bark of the tree, it was found, and only too commonly, on the pods, and its life history on the pods was the same as previously described, except that the time taken to produce all its spores was very much less. On the pod the whole life history could be gone through within under ten days, whereas the same number of months only sufficed when it grew on the bark. The canker on the pods was very important, as it reduced the crop, and it was still more important as it was the chief means of spreading the disease, because of the rapidity with which the fungus could grow in the softer tissues on the pod.

With regard to means of combating this, and other diseases, in the first place it was perfectly clear that all spore masses as far as possible should be destroyed by burning, and it was impossible to insist too strongly upon the fundamental importance

that is dissolved, put in three-quarters of a pound of pearlsh, or crude carbonate of potash, and then put the liquid in 10 gallons of water, soft if possible. Also dissolve half a pound of softsoap in hot water, and then pour it into the 10 gallons of solution, and stir well. Care must be taken not to get any of the caustic soda on the hands or clothes, and when using the solution, choose a still day to avoid the blowing of the spray on the face. Stout gloves should be used when spraying—rubber ones are best, and also old clothes, as the spray will ruin any decent ones.

Cost of this 10 gallons of solution need not exceed 1s. 6d., if the materials are bought at the proper prices. *Alger Petts.*

ORCHIDS AT SUNNINGDALE PARK.

ORCHIDS are grown in Major Joicey's extensive and beautiful gardens at Sunningdale mainly because they may be taken to make a more than proportionate part in keeping up the supply of showy and beautiful flowers at all seasons, and more especially in winter, when their fine and naturally-produced blooms constitute the main supply in the plant-houses. A very fine display of *Cattleya labiata* has just passed, and at present the houses are beautified by some effective arrangements of Orchids in flower set up with Ferns, Palms, Crotons, *Dracenas*, &c. In one house is a grand lot of *Calanthe Veitchi*, *C. vestita*, and other *Calanthes*; a remarkable feature about some of the strongest of them being that their fine flower-spikes are furnished with all the bloom open at the same time, some of the *C. Veitchi* having upwards of thirty bright carmine-rose coloured flowers all open together.

In the same house are some good *Cypripedium* × *Leeanum*, and others in flower. Adjoining houses have in one a fine display of varieties of *Cypripedium insigne*, &c., set up around some fine specimens of *Cymbidium giganteum*, each with several spikes; and in another a charming display of mingled *Dendrobium formosum giganteum*, *D. bigibbum*, and other species.

In the cool-houses, in bloom, are some good *Odontoglossums*, *Oncidium Forbesii*, and others of that section; a large specimen of *Masdevallia corniculata*, some bright-coloured *M. Veitchiana*, and other species, suspended overhead being a good show of brilliant scarlet *Sophranites*, some of the little plants bearing an unusually large number of flowers.

One house, the end of which was set up with scarlet-spathed *Anthurium Andreanum*, had in bloom a number of hybrid *Cypripediums*, many of them raised on the place, and in most of the other houses were some good things in flower.

Mr. Fred. J. Thorne, the gardener at Sunningdale Park, takes special pains in cultivating plants which have the reputation of being difficult to manage, and invariably he is successful. One of the most remarkable examples of this kind is the number of grand specimens of *Epidendrum* (*Diacrium*) *bicornutum* suspended in the warm stove-house, above specimen plants of *Eucharis*, coloured Crotons, and stove-plants of that nature. The *Epidendrum bicornutum* specimens have been grown from plants imported some years ago. They have produced their fine spikes of large white flowers with increasing profusion, and the beautiful healthy plants have grown to three times the size they were originally. In the same house the carmine-crimson *Broughtonia sanguinea* grows equally well; in an adjoining house some of the *Bollea* and *Pescatorea* section of *Zygopetalum* thrive admirably; and *Dendrobium spectabile*, *D. atro-vioaceum*, *D. Johnsoniae*, and *D. taurinum amboinense*, grow in a very vigorous manner. Among good batches coming into bloom, *Laelia anceps* and *L. autumnalis* promise to make a good show.

Much of the success in growing Orchids here may be attributed to the fact that Mr. Thorne keeps but few of the houses entirely for Orchids, but suspends the plants, or arranges them in suitable positions

on the staging of houses chiefly containing stove plants during their growing season, and utilises the extensive fruit-houses and vineries for ripening the tissues when at rest. Adjoining the Orchid-houses is a house filled with *Begonia Gloire de Lorraine*, both suspended and staged, literally covered with bright pink flowers; and other houses have good displays of *Poinsettias*, *Chrysanthemums*, &c.

WHAT TO PLANT.

Now, though perhaps it is just a little late, trees, shrubs, and herbaceous plants are thought of, and mostly re-arranged, some discarded, others still retained and given cosy nooks or sheltered corners, or else open spaces may have been found by experience to be the most suitable to their habit of growth.

This year, with me, it is a new garden, and yet an old, though an empty one, a garden, if such it may be called, devoid of beauty, for at present, flowers are conspicuous by their absence. Fortunately, the season is still "all that could be desired," or one could wish, for planting. Then comes the absolutely necessary consideration of "what to plant." What flowers have been the most enjoyable the last few years? Which have given the greatest amount of pleasure for the least trouble in culture?

For some time I have grown a large variety of shrubs, shrubby and herbaceous plants, chiefly to please myself, but of these I have found that three families and their varieties have been pre-eminently admired by my friends, and none the less so by their owner. They are *Roses*, *Pæonies*, and *Irises*. But then everyone loves *Roses*, *Roses* of all sorts and kinds, scentless *Roses*, sweet-smelling *Roses*, climbing *Roses*, dwarf *Roses*, large *Roses*, miniature *Roses*, *China*, *Bourbon*, *Japanese*, *Provence*, *Tea*, *Damask*, hybrid, and others. No matter the form or shape, colour or scent—still a *Rose* is a *Rose*. Our forefathers loved the *Rose*, as we now do, and doubtless so will posterity.

But to another genus, a more herbaceous one, the *Pæony*. True! it has but "a season," and perhaps it will be said, rather a short one, but if so, what a flower! How grandly beautiful are its gorgeous blossoms. Is there anything equal, much less to surpass, such wonderful inflorescence, as an artistic *Japanese* bowl, with a heap of *Pæonies* in apparently careless grouping, some hanging over, some half sunk below the gilt-edged rim, others in light pile to a little height, clustered in harmonious tints or in contrast, vying and out-vying each other in their varied beauty of delicate, tender, bright or light absorbing depth of colour. How softly sweet their scent is! As to form, their's is one all their own, with a fantastic charm. There is nothing like them in that way. There is a pleasing, vigorous self-assertion in the daintily stained petals—a something different, continuously different, no lack of arrangement, but that without formality. It is "Nature's art" alone, with an untrammelled beauty pleasing to the eye and rapturing to the senses. Yes! a bowl of *Pæony* blooms, in a floral sense, is something not only delightful, but almost, if not quite, one of rare and surpassing grandeur. To look on a group of *Pæonies* in flower is to feel and to know this. My friends have come, seen, gone, and they, too, have planted *Pæonies*. Now is the time to plant *Pæonies*.

I have often thought, wished and hoped that some day I might have seen Messrs. Kelway's magnificent and vast growth of these in all their loveliness. I have longed to see such a host of them in bloom, and such bloom as they bear with the Langport culture, but I am too old, and this will never be, and so I shall miss for ever the almost "garden of Eden," and of plant life "an earthly paradise."

But to the third group of plants—and they still more herbaceous—the *Iris*. Of these, I grow but the *Iris germanica*, and have, or had, about eighty or ninety variations. Like the foregoing, their

season is not long, but while it lasts, how exquisitely charming they are! How graceful! How elegant! Rich in colouring, or light, white, or delicately pencilled in purples, with silver and gold—no two alike. How beautiful! And these, like the former, have a form and growth all their own; and of these, and all of these of Nature's finest blend, what can be found for better observance, or the contemplative mind's recreation—"Plant *Iris*!" *Harrison Weir, Poplar Hall, Appledore, Kent.*

CYPRIPEDIUM INSIGNE VARIETIES.

AT this season there is no Orchid more acceptable than the fine varieties of this Himalayan species, either for the decoration of the house, or for cut flowers. The albino varieties are also very attractive at this season. Our illustration (fig. 157) shows a house in the establishment of the Horticole Colonial at Moortebeek, near Brussels, to which we called attention lately. The profusion of flowering plants in the finest health attests alike the popularity of the species, and the care of the cultivator.

TREES AND SHRUBS.

THE SIBERIAN LARCH.

ACCORDING to *La Semaine Horticole* for December 8th, Professor Mayr, of Munich, has recently published some observations of the Siberian Larch which he considered to possess all the good and none of the unsatisfactory qualities of the European variety. According to M. Mayr, it is a wholly distinct species, growing much straighter than its relation. The Siberian Larch yields 80 per cent. of straight stem. It proves more resistant to the usual causes of curvature. It appears also to require less light, and, grown in solely Larch plantations, natural pruning of the lower branches is completely effected. At first the two species grow with equal rapidity, but afterwards the Siberian Larch gets in advance and shoots up more rapidly. The *Bulletin de la Société centrale forestière de Belgique* says that the quality of the wood of the genus *Larix*, planted under the same conditions of climate, soil, and growth, is practically the same. M. Mayr visited, in Finland, a plantation of *Larix sibirica* 65 hectares (about 150 acres) that had been planted 130 years. The trees are magnificent, absolutely erect, and rising to 130 feet in height. The Siberian Larch, we may add, has sessile cones, and the scales of the cone are less numerous than in the common Larch. It was tried in Scotland by the Duke of Athol at Dunkeld, but unsuccessfully, as stated by Loudon and in Veitch's *Manual of Conifers*.

"THE FLOWERLESS SEASON."

THE title of this article is, to some extent, inexpressive, for as was recently indicated in an interesting article in the *Gardeners' Chronicle*, the winter season is by no means destitute of flowers. Nevertheless it is generally regarded in this sad-denying light, inasmuch as the floral treasures that then adorn our gardens are like Virgil's "raræ nantes in gurgite vasto;" that is, in other words, pathetically rare.

But they are to be found. Only yesterday I beheld a vigorous hardy specimen of that exquisitely fragrant miniature *Viola* entitled "Violetta," complacently putting forth flowers in a shady corner of my garden; while to-day (December 1) I came upon a wonderfully perfect bloom of the beautiful and richly odorous crimson *Rose*, Captain Hayward, as fine in colour and form as it is during the summer season, though perhaps not quite so large. There are many flower-buds on precious *Rose*-trees in different parts of the garden which only require a very little of that rare element, viz., winter sunshine, to unfold their glowing hues.

The *Linaria* still produces in sheltered places on the south wall of my "Paradise Terrestre" its



FIG. 137.—ALBINO VARIETIES OF *CYPRIPEDIUM INSIGNE*, IN THE COLLECTIONS OF THE COLONIAL HORTICOLE, ANTWERP. (SEE P. 472.)

lovely lilac and white floral gems of purest ray serene; and the modest Daisy, so inseparably associated with the memory of Robert Burns, is found lowering with as much graceful equanimity of aspect as if spring-time were at hand. And can we suppose that it is far away, when the Snow-drop is already forcing a passage through the soil, and silently preparing for its future, and by no means far distant, floral revelation, when it will rise like Hope from the grain of winter to hail the advent of the heroic, stern-conquering spring.

Jasminum nudiflorum, earliest and bravest of all the winter glories (for it shines through an almost sunless season, when the atmosphere is enervating to a painful degree) is already in full flower on a north wall exposed to the pitiless winter blasts; ere long we will have the strongly-contrasted, snow-white beauty of the Christmas Rose. It is not a Rose in any sense of the expression; in aspect it much more resembles the Anemone, but, as Tennyson says of the pearl-like shell in "Maud"—

"Let him name it who can,
The beauty would be the same."

There are many naturalists who believe that *Anemone fulgens* and not *Lilium chalcidonicum* was the "Lily of the Field" which was blessed by Jesus Christ; to those who are fonder of sacred associations than of botanical distinctions, *Helleborus niger* will always remain the Christmas Rose. In the light of those fair emblems of Hope, and Patience, and gentle Resignation, which shine like stars of earth amid the desolations of winter, well might we echo the thoughtful words of Longfellow in our inmost hearts—

"In all places then, and in all seasons,
Flowers expand their light and soul-like wings;
Teaching us by most persuasive reasons
How akin they are to human things.

And with child-like, credulous affection,
We behold their tender buds expand—
Emblems of our own great resurrection,
Emblems of the bright and better Land."

David R. Williamson.

FORESTRY.

AVENUES.

THE planting of an avenue, or rather its appearance when first planted in a park, is probably the most serious objection to its formation in the minds of many. The usual method is to enclose each tree in a wooden or iron tree-guard, the result of which at the outset is the formation of an avenue of tree-guards, the trees themselves being invisible at any great distance. For the first few years after planting, an avenue in this condition is rather an eyesore than anything else, more especially when heavy wooden guards are used in place of the lighter iron ones which are more frequently made use of now-a-days. But in either case the effect can hardly be termed good until the trees have grown sufficiently large to overshadow and dwarf the guards at their base, and deprive them of that undue proportion which they exhibit in the early stages. To find a remedy for this is not always easy. By planting large trees, say 20 to 30 feet in height, the awkward period may be got rid of, but the expense is enormously increased, and trees of that size are not always procurable at a short notice, or within easy distance of the intended avenue. Trees of 10 to 20 feet are not so difficult to find, or so expensive to move, but sufficiently so to make one pause before using them in place of smaller and cheaper trees, which in some soils get established more quickly than the former, and make up by a quicker growth after the first year or two for their smaller size at the outset.

One way of getting a speedy effect without going to too great an expense is by mixing a very quick-growing species with the one intended to stand permanently, and taking out the former when no longer needed, or when beginning to encroach on

the latter. Viewed in perspective, the smaller sized trees are not noticed; and with such rapid growers as the Black Italian or Abele Poplar, an effect is produced in one quarter the time that it would take with trees of average growth alone. With well prepared and enriched soil, it is wonderful what growth such trees will make in three or four years; thus enabling the planter to produce an effect which, without them, could only be attained by a great expenditure, or by waiting ten or fifteen years for the slower growing species. Another advantage which these trees possess is their free and easy habit of growth, thus tending to take off a great deal of the stiffness which trees of symmetrical habit assume in their early stages of growth.

In planting a long avenue, it is just a question whether it is not preferable to enclose the ground occupying the line of the avenue with a light, iron fence, and do away with the necessity for guards for each tree. The chief objection to this is, that the fence divides the park through which it runs into two parts, creating an artificial line of division which spoils the general effect to some extent. But if this applies to a temporary erection not more than 6 feet in height, it would apply as forcibly to the avenue itself; in fact, more so, for the fence is scarcely perceptible at a distance of 100 or 200 yards, whereas the mature avenue effectually cuts in two the ground through which it runs.

As far as expense is concerned, the advantage possessed by one system over the other would depend upon the distances between the trees, and the number of rows in the avenue. If the latter consist of two rows on each side, and the distance between the trees is not more than 30 feet, the cost would be much about the same in either case; but if the trees stand at wider distances, or only one row is planted; the guards are much the cheaper form of fencing, if only the minimum number of trees are to be planted which are to stand permanently.

But the great advantage of enclosing the ground is, that it enables the avenue proper to be strengthened, and filled up during its early growth with a number of trees and species which serve to embellish the ride or drive which runs between it, making it much more attractive, and an ornamental feature at a period when it is usually thin and meagre. In many situations, or where the soil is at all shallow or poor, the avenue trees are all the better for a little nursing until they have attained the desired height, and with densely foliated species such as Beech or Lime, a little side shade lightens their appearance, and prevents them from becoming round-headed too early in life. Of course, the main object must be kept steadily in view, and the necessary thinning and clearing out must be done before it is too late, or before damage has been done to the principal trees. If not, the avenue either becomes a belt, or had better be made into one, on the principle of making a virtue of necessity. When ornamental trees or shrubs have been freely mixed with the avenue trees, there is always the temptation to defer this thinning out longer than should be the case, and for this reason, as well as on the score of economy, the class of stuff used for this purpose should be comparatively cheap, and of such a nature as may be crushed out or suppressed by the legitimate trees themselves. It may happen that owing to the failure of part or all of the trees intended for the avenue, these accessory species may be converted into a permanent belt, or at least into a type of avenue which, if of an informal nature, is quite as attractive in its way as the more correct form. The famous Beech "avenue" at Sevenoaks is nothing but a drive through a belt of trees, the latter standing close, and at no regular distance apart, and although no avenue in the strict sense of the word, yet it possesses far more character and beauty than many laid out in a more careful and methodical manner. *A. C. Forbes.*

(To be continued.)

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By J. ROBERTS, Gardener to the Duke of Portland, Welbeck Abbey, Workson.

The Early-Peach-house.—The weather has favoured the blossoming of the trees, and as soon as the blooms show colour let the amount of humidity of the house be reduced. Syringing being not practiced in sunless weather, a slight syringing of the trees in bright weather will assist in dispersing the pollen. Rub off the blooms on the back parts of shoots on wall-trees, and a goodly proportion of those on the under side of trees growing on arched or other trellises. Attend daily to the setting of those more favourably situated, using a soft brush or feather. Keep the house dry and free from moisture during the early part of the day, until the blossoms are fertilised. Ventilate freely on warm days, and afford a small amount of ventilation at the top of the house night and day till the flowers are set. The borders should be maintained in a moderately moist state, but do not flood the border at this stage.

Early Pot Figs.—The trees are now at a critical stage, and checks of any kind should be avoided. When the fruits reach the size of a full-grown Walnut, dropping is no longer to be apprehended. A rise in the temperature to 60° at night, and 65° by day, and a steady bottom-heat of 70° to 75°, will maintain progress in the trees safely. Disbudding will soon become necessary, or crowding of the shoots will occur later on; have an eye to keeping the centres of the crowns open, and remove or stop gross shoots likely to rob the others of their vigour, the stopping taking effect a few joints beyond a fruit. With drainage in good order, mild manure may be afforded Figs at this stage. Ventilate the house when the warmth has risen to 65°, and admit air at all times during mild weather in small quantities, as nothing is more injurious than a stagnant state of the air.

Strawberries.—These plants may now be introduced into any forcing-houses that have been put in order, which are about to be forced. The shelves that are situate near the roof at the apex of a house, afford the most suitable positions for Strawberry-plants at this season. The plants are benefited by a top-dressing of turfy-loam and horse droppings, with a little soot added, removing a layer of the surface-soil, and making the whole new materials firm. It will be advisable to keep a quantity of bracken or dry litter in readiness, to cover pot Strawberries, if hard weather should ensue.

PLANTS UNDER GLASS.

By T. EDWARDS, Plant Foreman, Royal Gardens, Frogmore.

Conservatory.—The bulk of the varieties of *Chrysanthemums* are now passing out of flower, and the plants should be removed, to enable a thorough change to be made in the arrangement of the inmates. By raising the temperature of the house only a few degrees, some of the plants from the stove may be brought in, making a good display, and at the same time rendering these plants more serviceable if they should be required for the decoration of apartments. These consist of *Poinsettias*, *Plumbago rosea*, *Roses*, *Begonias* in variety, *Eucharis grandiflora*, *Clivias*, *Euphorbias*, *Gesneras*, *Eranthemums*, and many others to which water must be very carefully and sparingly applied. Other plants to be made use of are *Richardias*, *Liliums*, *Primulas*, *Cinerarias*, and *Dutch bulbs*, *Acacias*, *Azaleas indica*, *mollis*, and *Ghent*; *Ericas* and *Epacris*, and *Linums*, which, if thinly arranged together with foliage plants to afford contrast, will make an entirely new feature. Those who have not grown retarded *Lilium Harrisii*, and are expected to have a good display at Christmas, should make a note of them for another year. A quantity of bulbs, here potted up the first week in September in 48's are now about 2½ feet in height, and in full bloom; they were grown in a cold, unheated pit until flower-buds were formed, when some of them were placed in a forcing-house; the remainder are giving promise of a succession of bloom during the month of January. Retarded plants of *Spiraea japonica*, potted at the same date, are now past their best. These succeed just as well under cold treatment, and by retarding them in cold storage, it is an easy matter, by potting them in batches, to have a regular supply during the late autumn and winter months.

General remarks.—Propagate Chrysanthemums as fast as good cuttings are to be obtained, and remove plants of which the shoots are not on the move to an early vinery. Put in cuttings of *Salvia splendens* and *S. s. Nana*. Divide and pot up a batch of *Cannas* in 48's, using rich sandy soil, and place them in an intermediate-house. Sow seed of *Rhodanthus* in variety in pans filled with light soil, and prick-off the seedlings when they can be handled. Sow seed in pots of *Mignonette Matchett*, *Chrysanthemum segetum*, *Godetias* in variety, and *Calliopsis Drummondii*; of these, about a dozen seeds per pot (6-inch), regularly distributed on the surface are enough. Plunge the pots in coal-ashes in a cold pit, and afford protection in frosty weather. It is surprising that more use is not made of annuals as pot-plants; the plants being so easily grown, and for mixing in groups or massing in distinct colours, they are quite as effective as many perennial plants which require care all the year round.

Carnation Souvenir de la Malmaison.—The earliest-potted layers and old plants will, in some cases, be showing flower-stems; keep, therefore, a sharp look-out for aphides, for if these be allowed to settle in the axils of the leaves, the common result is deformed flower-buds. Dip the plants in a weak mixture of tobacco-water and soft-soap, and if the pots are well-filled with roots, afford diluted manure-water occasionally, the quantity being increased at a later part of the season. Good ventilation is indispensable for the Carnation, and it should be afforded day and night, provided the temperature can be maintained at a minimum of 50°. Any necessary repotting may be carried out forthwith.

THE HARDY FRUIT GARDEN.

By A. WARD, Gardener to F. A. BEVAN, Esq.; Trent Park, New Barnet.

Cleaning Fruit Trees.—Fruit growers now commonly make it a point of practice to cleanse fruit trees every winter, so far as their means allow, the best time for the operation being at the finish of the pruning, and previously to forking the borders. No cheaper or more efficient insecticide exists than the caustic soda mixture recommended by me in earlier Calendars. Unlike some other preparations, this needs only to be applied in the form of a fine spray, for so caustic is it that all insects are at once killed by it. Spraying should always be carried out in calm weather, in order to prevent waste. The old-fashioned whitewashing of stems and branches removed the moss and lichens, but it had not the least effect on the insects. Freshly-slaked lime dusted over the trees when damp after rain or fog is more efficacious, and might be used on standard trees, as such cannot be effectively sprayed without a spray-pump. Trees infested with American blight should be dealt with separately, as spraying has no effect on this species of aphid. In dealing with it, first remove the loose bark on the infested branches and stems under which the insect breeds; then with a half worn out paint-brush apply the petroleum emulsion in such a manner that it is forced into every hole and crevice. Having done this much, remove the soil down to the roots, and if the pest is found to be present there, afford the soil over the roots a mixture of petroleum in the proportion of 1 fluid oz. of the former to a gallon of water. Cover the roots again with fresh soil.

Digging.—When the pruning, &c., are completed, let the soil beneath the trees be lightly dug, also the borders at the foot of the fruit-walls, not going deeper than 4 or 5 inches; or if roots are very numerous and shallow, scatter fresh soil over the surface. Old mulches should be removed in part. Mortar-rubble may be spread over the alleys before they are dug if the soil is retentive. Let the digging of plantations of bush-fruits be carried out.

THE FLOWER GARDEN.

By J. BENBOW, Gardener to the Earl of Ilchester, Abbotsbury Castle, Dorsetshire.

Helleborus niger, and its varieties.—These useful hardy plants are pushing well into flower, and should be protected from wind and rain whilst the flowers last. This may be afforded by pegging down strips of green scrim canvas, keeping it well up to the neck of the plants, or putting hand-lights over them, tilting these so as to afford air at almost all times. Any of these plants which may have

been lifted for forcing them into flower, should be hardened off in cold frames, and then planted in a partly shaded spot such as that advised for hardy Ferns in a previous calendar. The roots revel in turfy-loam, leaf-mould, rotten-manure, and sharp grit. Such plants should not be disturbed for three or four years. If small pieces of the plants are brown, split them off and plant in prepared borders; they grow to a useful size in two or three years. Seedling *Hellebores* flower the third year from time of sowing, and these, if stored in cold frames with plenty of air in humid weather, and kept clear of decaying leaves, the surface of the soil stirred, and the ashes or cocoa-nut fibre kept fresh and clean, make good progress.

Nymphæas and other Aquatics.—Although these have long been in a dormant state, it is advisable when they are grown in cement tanks to have the water at the least 1 foot in depth over the tubs, &c., in which they are planted, or frost may injure the weaker plants and rare species. Ice should never be allowed to grow to any great thickness in brick or slate tanks, as there is a danger of the walls bursting, and the ice-sheet should be broken up morning and evening.

Work in General, Walks and Drains.—When rain-water cannot escape by means of gullies, grips, and catchpits, much injury is done to the surface of walks, and it should be the business of the gardener or his subordinate to see that all these means of exit are put in workable order from time to time, it being especially necessary to keep catchpits clear of sedimentary matter, and the gratings clear. Apply another dressing of weed-killer or common salt to walks upon which moss or Liverwort are troublesome, choosing a time when there is a prospect of fine weather ruling. Turfing and ground-work of all sorts should be carried out diligently, and when relaying turf be very particular to get a smooth and even surface on which to lay it, using the levelling rods and plummet-level in order to obtain accuracy, whether of dead or hanging levels. The work is always better accomplished if the ground is dug over after having been stripped of the turf. Turf may be cut in strips 1 foot wide by 3 feet long, or in 1 foot squares. It should be stacked at various points convenient to the work. In wet weather the turf-layer should stand on the turf and face the bare ground. Let the grass be made firm with "beaters," and finally roll it well in various directions.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

A retrospect.—On looking backwards, the cultivator finds that he has little reason to lay the blame of any failures that he may have had to deplore to the weather; not that the latter has been perfect in regard to the important item sunlight, for the summer was far less brilliant than that of 1899. The winter was, however, comparatively mild, free from fogs of any long duration, with cold, searching winds; but the employment of artificial heat was not excessive. Artificial heat, as most of us know, is the bane of the Orchid cultivator when it has to be largely made use of, which is a reason that a mild season, though bad in some directions for the plants, is good for them taking natural rest. The spring was late, but not unfavourable. Spring-flowering *Cattleyas* and *Lælias* were late in blooming, but the quality of the bloom was very good. The plants were also late in commencing to grow, but owing to the favourable autumn and early winter months progress was very satisfactory. June and August were the worst months, the weather being generally dull, with a period extremely warm during June. *Dendrobiums* that make their growth during these months suffered the most, the great sunheat inducing growth, which failed to mature under the subsequent dull conditions. During July cool *Oreobids* had a trying time, the extremely high temperature and the brilliant sunshine causing a weakening of the plants. They have now greatly recovered their health.

Insect pests.—Thanks to the remedies now procurable, the gardener can readily keep insects in check without injury to the plants infested. Scale of various species are the most difficult to destroy, but even these may be kept under. The *Cattleya* fly succumbs to frequent mild fumigations whilst in the fly stage;

but when in the grub or egg stage, nothing but hand-picking is of any use. The tiny grub that infests *Cattleya*-roots was at one time much dreaded, but further knowledge of its habit proves that it causes nothing more than a blemish. During the winter, when little work beyond cleaning the plants is engaged in, all tuberculated parts of the roots should be examined, and the living grubs destroyed with a knife-point. The insect which infests the swelling growths must, I think, be of a different type, for although we have ample evidence here of the one which infests the roots, in no instance have the growths been affected. The *Dendrobium* beetle, fortunately, has not become common property, its destruction with that of the plants infested having been promptly carried out by the possessors. All available time should be devoted to cleaning the plants, so that when potting and other work engages attention, the plants will not suffer.

Bletia hyacinthina.—This useful inmate of the hot-house is now pushing its growths through the soil, and if more pot-room is needed, repotting may be carried out forthwith. The clumps should be planted in pots half filled with drainage, in a compost consisting of one-third peat, one-third of turfy loam, and one-third of chopped moss, sand, and dried pulverised cow-dung. Place the pots in a light, cool position, and afford no water, excepting to keep the surface moist, until the flower-spikes appear in the young growths.

THE KITCHEN GARDEN.

By A. CHAPMAN, Gardener to Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Forcing Potatoes.—The Potato-sets having been placed in warmth to sprout, the gardener should prepare his frames or other contrivances in which forcing will be carried out. If only a few dishes are needed pots are the best, and even if frames are used for the bulk of the crop, a few sets may be planted in pots at the same time, the produce from which will be a little in advance in point of time of the others. The best results are obtained from hot-water pits, it being difficult to maintain a steady warmth of 60° in the months of February and March with leaves and litter alone. If heat is obtained from fermented materials, loamy soil to the depth of 1 foot should be placed on the bed to become warmed before the sets are planted. In filling the pit or frame, sufficient materials should be placed therein to bring the surface of the soil about 1 foot distant from the lights, which will in course of time sink to 18 inches. The sets may be put 3 inches deep at 1 foot apart in the rows, and the latter should be 1½ ft. apart. Afford enough water to keep the plants in a healthy state, but much moisture tends to cool the bed and hinder progress. If flower-pots be used let them be 10 to 14 inches in diameter, and partly fill them with compost, adding more soil when moulding-up becomes necessary. Not more than three sets should be placed in the smaller size, and four in the larger one, and these should be well drained.

The Mushroom-house.—Whilst mild weather continues, artificial heat will scarcely be necessary, only just keeping up a warmth of 55° to 60°. If the Mushrooms turn black, the degree of warmth and the humidity of the house must be reduced. If the house should at any time get too warm, cover the hot-water pipes with mats. A steamy atmosphere discolours, and a hot or dry one shrivels up the young Mushrooms.

Carrots.—A small sowing should be made in a hotbed in a frame, using in the construction of the bed a small quantity of litter and tree-leaves in the proportion of three-quarters of the former to one-quarter of the latter, well firming the materials a week or so before sowing the seed. It need not be more than 2½ feet in depth. Carrots and Radishes may be sown together, but it is better to keep them apart. I know of no better variety than Parisian Forcing for this sowing. The rows should be 9 inches apart, and the seed sown moderately thickly.

French Beans.—The plants raised in October are now in bearing. Later sowings should be afforded occasionally liquid-manure. If the points of the stems are not as yet nipped out, let this be performed forthwith, and make fresh sowings at fortnightly intervals in a temperature of 70°. The plants when not in bloom must be diligently syringed daily, or red-spider will ruin them.

SALES FOR THE ENSUING WEEK.

MONDAY, DEC. 31.—Dutch Bulbs, Roses, &c., at Protheroe and Morris' Rooms.

WEDNESDAY, JAN. 2.—Japanese Lilies, Dutch Bulbs, Continental Plants, Roses, &c., at Protheroe & Morris' Rooms.

FRIDAY, JAN. 4.—Dutch Bulbs, Herbaceous Plants, Roses, Imported and Established Orchids, &c., at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—36° 7'.

ACTUAL TEMPERATURES:—

LONDON.—December 26 (6 P.M.): Max. 53°; Min. 47°.

December 27—mild, rainy.

PROVINCES.—December 26 (6 P.M.): Max. 50°, South-west Counties; Min., 40°, North-east Scotland.

THE last year of the century has not, so far as horticulture is concerned, been very remarkable. It has been a year of quiet, steady work, rather than one of spasmodic energy. Taken for all in all, the weather, though very variable, has been favourable for garden operations, and the garden crops have been generally good. The prolonged dry summer, coming in succession to two or three others of like nature, will no doubt affect tree-vegetation, and we shall hear—nay, we do already—of trees dying in what seems a mysterious manner, but whose death is doubtless in many cases attributable to the succession of dry summers. The fruit crop was extraordinarily abundant, and the quality was good. A violent storm in the south did much injury, but, as it turned out, the mischief was confined to a relatively small area, and did not materially affect the crop as a whole. In late June the Strawberries near London were much damaged by rain.

Exhibitions were as numerous and as well maintained as ever. The great Paris Exhibition, like its predecessors, was not very remarkable from a horticultural point of view, and very few British exhibitors cared to enter the lists. At home the fortnightly meetings of the Royal Horticultural Society have been very successful, and the Temple Show, like the great Fruit Show at the Crystal Palace, suffered no diminution in extent or interest. The exhibition of Sweet Peas at the Crystal Palace was a novelty, and did good by enabling the experts to group the vast number of varieties into sections, according to colour. Possibly it may do further good by inducing growers to discard varieties that are in any way inferior. Another point brought out was the ineffectiveness of the Sweet Pea as an exhibition flower. The National Chrysanthemum Society has effected much good by educating the more rigid florists, and inducing them to develop a less formal and more beautiful type of flower, and also in promoting a more tasteful style of exhibiting them.

The most pressing need, so far as exhibitions in the metropolis are concerned, is the establishment in a suitable situation of a horticultural institute, with an exhibition hall to replace the present make-shift arrangements. Unfortunately, we see at present no prospect of realising this dream.

The Chiswick trials have been subjected to adverse criticism, partly from a misapprehension as to their real nature and object, partly from causes that might easily be remedied. They cannot and need not attempt to compete with the far more extensive trials conducted by the growers for their own purposes. They may, however, do great good by settling nomenclature, clearing up synonymy, and obviating the employment of two names for one thing. A type collection of the best varieties for particular purposes would be most convenient for reference, and would reduce to their true

value many of the infinitesimal shades of difference now existing between varieties which are too much alike. As the lease of the Chiswick Garden has still some twenty years to run, it does not seem to be expedient, under existing circumstances, to incur the formidable risk and cost of establishing a new garden elsewhere, particularly when other matters are of more pressing consequence.

The sale of poisons for horticultural purposes has excited much discussion, especially among members of the trade, and attempts are being made to remove the restrictions which at present attend the sale or the purchase of these substances. The pharmacist who deals in grains is tied down by all sorts of restrictions; but the ironmonger, the grocer, or the oilman can deal with these substances by the hundredweight without any let or hindrance. The public interest would be best served by insisting on precautions similar to those now incumbent on the druggist being extended without exception, so as to apply to all dealers who handle these dangerous substances. We have ourselves bought, or caused to be bought, on more than one occasion, from seed establishments poison enough to destroy a large number of persons without any inquiry being made, whilst the containing packages had not the slightest intimation of the poisonous nature of their contents. As spraying is likely to come more and more into use, it is in the highest degree necessary that every reasonable precaution be taken in the sale of such goods, and this, we believe, will be provided for in the proposed new Bill. If so, and there is no monopoly in favour of one set of dealers, neither the horticulturists nor the public will have reasonable ground for complaint.

The obituary list is heavy, both numerically and intrinsically, as may be gleaned from the following names. R. D. BLACKMORE was as distinguished as a pomologist as he was as a novelist; true he did not publish much in his own name, but he was a frequent contributor to this Journal, and the last edition of Dr. Hogg's *Fruit Manual* bears emphatic witness to his powers of observation and judgment. The MARQUIS OF BUTE will be remembered for his successful attempts to establish vineyards in Wales. BENJAMIN CANT is a name honoured by all rosarians, the prizes he won are numbered by thousands, but we are not aware that he contributed anything to the literature of his profession. The name of GATER is also held in honour by rosarians, and some of the greatest triumphs in the exhibition-tent are recorded of him: Dahlia growers will lament the loss of WILLIAM DODDS, better known a few years ago than lately. In T. B. HAYWOOD we have lost an earnest and thoughtful amateur, who in various ways contributed to the advancement of horticulture; his address at the Chrysanthemum Conference at Chiswick some years since revealed an insight into the principles of horticulture and their application which came as a surprise, even to his friends. E. J. LOWE was a man of wide sympathies and very varied attainments, best known to horticulturists by his labours among Ferns. Sir JOHN LAWES is most appreciated by agriculturists, but the value of his unparalleled labours at Rothamsted will be experienced in horticulture, as the lessons they convey are, in their degree, as important to the gardener as to the farmer. JOHN LAING will be remembered as long as Begonias last, but the improvement of these plants by no means constitutes his only claim to remembrance.

In Mr. MAXWELL of Munches, we have lost not only an old correspondent, but an amateur distinguished by his knowledge of trees.

LORD PENZANCE will long be remembered in the Horticultural world for his experiments with the Sweet Briar, which will constitute a more fragrant reminiscence than the law will afford.

It would be difficult to over-estimate the value of the labours of G. J. SYMONS, who devoted the whole of his working life to the investigation of meteorological problems, and especially of the rainfall.

Among our foreign friends we have to lament the death of M. A. DE LA DEVANSAYE, of EDWARD PYNAERT, and H. J. VAN HULLE, three men who, in various ways, have made their mark in horticulture.

We have named a few representative men whose loss constitutes a severe privation to horticulture. While honouring their memory, we have full confidence that they will find successors to carry on their work and profit by their example.

"The work goes bravely on," in spite of the gaps made in our ranks. This is shown in many ways, and may be illustrated by the literature of our craft, which shows no signs of diminution. Indeed, the number of volumes on gardening, especially on what we may call popular gardening, is astonishing, and the appetite of the public for such productions is no less remarkable. Some of these books are clearly of an ephemeral character; but they give pleasure to the public, and do indirect good to horticulture. Of more lasting and substantial value are such books as the supplementary volume of NICHOLSON'S *Dictionary*, the new editions of THOMPSON'S *Gardeners' Assistant*, VEITCH'S *Manual of Conifers*, MAWSON'S *Art and Craft of Garden-Making*, and BAILEY'S *Encyclopedia of American Horticulture*—a work, *mutatis mutandis*, as valuable on this as on the other side of the Atlantic.

And so there can be no question that we are, so far as all horticultural matters are concerned, much better off at the end of the nineteenth century than our predecessors were at its commencement. It rests with us and with our successors to emphasise this state of affairs, and, so far as in us lies, to take care that the twentieth century shall also be one of such improvement and progress that at its termination the chronicler may be able to point to a still higher phase of evolution.

* * OUR ALMANAC—According to our usual practice we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1901. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical, and allied Societies, or any of our correspondents, will send us immediate intimation of all fixtures for the coming year.

"A CONTENTS-SUBJECT INDEX TO GENERAL AND PERIODIC LITERATURE" (by A. COTGREAVE, F.R. Hist. Soc.).—This work is dedicated to Mr. J. PASSMORE EDWARDS, whose portrait faces the title-page. A work of this kind, in whatever manner it be compiled, is sure to be of value. A hundred thousand references is a goodly number, but many hundred thousands more would be required to make the index anything like complete. Selection and elimination must therefore have been adopted by the compiler, but on what principle the selection was made is not obvious. For instance, under "Gardening" we find a reference to "garden puts" in CASSELL'S *Gardening*, 1884-6, but few other references to that encyclopaedic publication. The references under "Botany" are still more puzzling. A few separate books are men-

tioned, and numerous references to periodical literature are given; but one fails to see why many equally and generally much more important publications are passed over, and what is the reason for the insertion of those which are recorded. All that is told of the Linnean Society and of Sir JOSEPH HOOKER respectively is in the shape of a reference to DARWIN'S *Life and Letters*. In an appendix a list of books on various subjects is given. Here again the selection of books under the head of "Botany" is as curious as it is inadequate. In this paragraph is one of the very few printers' errors we have discovered—Dr. VINES is here called Sir H. VINES. In "the list of works of bibliography," we do not find mentioned Mr. JACKSON'S *Guide to the Literature of Botany*, nor the same author's *Bibliography of Vegetable Technology*, nor even PRITZEL'S *Thesaurus*. Criticism of this kind is easy, but the compilation of so vast a series of references must have involved very great labour, so that in spite of its inevitable defects it will be of great use to the student.

BRIXTON, STREATHAM, AND CLAPHAM HORTICULTURAL SOCIETY.—After ten years devoted service Mr. ROUPELL finds it necessary to resign the honorary secretaryship of this society. Under his management a series of exceptionally fine shows have been organised, large amounts of prize money have been punctually paid, and in each year there has been a balance in hand. The committee in recognition of these services are desirous of presenting Mr. ROUPELL with a substantial token of their gratitude, towards which the assistance of lovers of horticulture in the district is requested. Subscriptions may be paid to N. SHERWOOD, Esq., Dunedin, Streatham Hill, S.W. The assistant-secretary is Mr. H. WRIGHT, 43, Barcombe Avenue, Streatham Hill, S.W.

THE DEATH OF MR. PHILIP CROWLEY necessitates the election of a Chairman of the Fruit Committee of the Royal Horticultural Society. It is felt to be most desirable that the gentleman selected should be one not directly connected with commercial horticulture.

"FLORA OF TROPICAL AFRICA."—The third part completing the fifth volume of this work has just been issued. It contains the Labiatae elaborated by Mr. BAKER, and sundry addenda. Much light is thrown in the preface on the cause of the vexatious delays in the publication of this important work. "The present volume," says the editor, "was ready for the press at the beginning of 1898. The inconvenience of the delay in publication is obvious. The contributors see other writers secure the priority of their work, while the manuscript has continually to be rewritten to incorporate what has been published while it is waiting for the printer. For all this I am in no way responsible. I prepare the work, but over printing and publication I have not the slightest control; and as no less than five government departments have a say in the matter, the task of getting them into line is one of no small difficulty. A fire which took place at the printers in December of last year was a further impediment; fortunately, however, most of the manuscript was recovered eventually from the ruins. Three more volumes will complete the work as originally planned. Their preparation presents no inherent difficulty, but their fate lies on the lap of the gods."

WATER-CRESS COOKED.—Mr. A. H. TYRRELL, writing in the *Garden*, advocates the use of Water-cress cooked as Spinach, than which it is stated to be much more delicate. The leaflets should be picked off, boiled like Spinach, and rubbed through a wire sieve. It can be served like Spinach for dinner, with fried sippets or poached eggs; while for breakfast it forms an excellent mat on which to lay broiled kidneys, a savoury omelette, angels on horseback (rolls of broiled bacon with an oyster within each), grilled chicken, &c. What a tempting menu!

"LIVE STOCK JOURNAL ALMANAC" (VINTON & Co.).—This publication is compiled for the special benefit of stock and horse-breeders, and contains much information of great value to them. In an article on the supposed influence of a first sire, Mr. TEGETMEIER denies the hybrid origin of the so-called "hare-rabbits." In every particular this animal is a rabbit, and not a hybrid hare. Hare-rabbits are merely large rabbits, selected so as to breed as closely as possible to the colour of hares. In the same article, Mr. TEGETMEIER alludes to the experiments made by himself and others to test the hypothesis of "telegony," or the supposed influence of a first sire on the offspring from a subsequent union where the male parent was different from the first. These experiments were purely negative in their results, and lead Mr. TEGETMEIER to say that telegony does not exist.

THE SEYCHELLES.—Mr. CHAMBERLAIN has given his sanction to the establishment of a botanic station in the Seychelles, which, with the co-operation of the Director of Kew Gardens, will be started on the first day of the coming century. Some people have actually assigned the site of the Garden of Eden to the Aldabra group in the Indian Ocean, now famous for little else than the gigantic land tortoises, of which so many have been sent to the Zoological Gardens through the instrumentality of the Hon. WALTER ROTHSCHILD, M.P. Every description of plant which is likely to be of the slightest economic value will be obtained from other countries, and the treatment of the soil will be made the subject of special experiments. The islands are in direct communication by steamer with Colombo, Mauritius, Aden, Zanzibar, and Bombay, a factor which is likely to play an important part in the development of their internal resources. Our contemporary, the *Daily News*, overlooks the famous double Cocoa-nut, around which so many legends have collected, the most fantastic being the theory of the late Gen. GORDON above alluded to, that this was the forbidden fruit.

THE CALIFORNIAN VINTAGE OF 1900.—We learn through the Agricultural Department at Washington that the estimated production of wine in the State of California for the present year is between 13,500,000 and 15,000,000 gallons of dry wine, and 7,000,000 gallons of sweet wine. The reader will doubtless have observed that the vintage of Europe is placed at an enormously high figure.

IMPORT DUTIES ON FRUITS AND VEGETABLES IN NICARAGUA.—At the ports of The Bluff and Cap Gracias a Dios the import duties have been reduced one quarter on Onions, Leeks, preserved fruits, fresh fruits, fresh vegetables, and Potatoes.

ERADICATING OPUNTIAS.—M. CHARLES PATIN, of Brussels, sends us a note, the French version of which appeared in *La Belgique Coloniale*, on "The Eradication of Opuntias," which, says he, "though considered a nuisance by tropical agriculturists, have lately been in several quarters recommended as useful in checking fires. It has for long been thought that the Opuntia used in Colombia for hedges is incombustible. The origin of this mistake, that is made by many, lies in the fact that after being subjected to the flames the plant appears to have preserved its vitality, and it remains standing. The explanation is easy: the flame envelops the plant, and leaves it apparently intact, but the heat affects the tissues, especially of its younger parts, fermentation is set up, then decomposition, and the death of the plant. In my opinion, the only means of economically eradicating the Opuntias is by fire, the method most usually preferred in Colombia. Isolated specimens are easily destroyed by piling round them some dried plants, and setting fire to these. But for large clumps the following plan should be pursued: in the rainy season plant round the clumps bushy lianas having a dense foliage, *Dolichos*, for example; these lianas, planted in such quantities

that they entirely cover the Opuntias, are cut down at the beginning of summer, and burnt when dried. This causes most of the Opuntias to be destroyed, and the operation is repeated when the succeeding rains have caused the lianas to grow again. Afterwards the ground can be used as pasture, and if some shoots of Opuntia have partly escaped the fire and grow again, they are easily removed, by burning them a third time, using the same *Dolichos*, which will again grow over them. If the grounds are to be made into meadow-land—and for this such fields are well suited—it is advisable, after the first firing, to sow the spaces free from Opuntia with *Panicum altissimum*, which, in Opuntia-infested lands, is the grass which grows best, and forms, at but small expense, meadow-land excellent in quality and easily maintained."

MR. J. H. KRELAGE, on his retirement from the presidency of the General Bulb-Culture Society of Haarlem, which office he has uninterruptedly held for forty years, was presented by the members with a magnificent life-sized portrait, painted by the renowned Dutch artist HAVERMAN. The society, when started in 1860, consisted of nearly 200 members, and now it has about 2,000 members, all interested in bulb-culture, and twenty-eight local sections in the bulb districts. The president-elect is Mr. J. H. WENTHOLT.

PLANT PORTRAITS.

APPLE KURLAN DER GULDERLING, *Wiener Illustrirte Garten Zeitung*, December.

CYPRIPEDIUM VILLOSUM DUPLO-VITTATUM, *Gartenflora*, December.

DIOSCOREA FAROESI, *Revue Horticole*, December 16.—A Chinese edible tuber.

GAILLARDIA ARISTATA, *Mechanics' Monthly*, December.

RAPHIOLEPIS DELACOURI X, *Revue Horticole*, December 1.—A cross between R. indica and R. ovata. Flowers rose-coloured.

ROSE SOLEIL D'OR, *Rosen Zeitung*, November.

PENDULOUS TREES.

WEeping trees, such as that of which we give a figure from Messrs. Smith's nursery at Worcester (see Supplementary Illustration), are always striking, not unfrequently highly decorative, but sometimes merely quaint or odd. The Weeping Birch and the Weeping Willow are models of elegance; the Weeping Spruce, or that form of it known as *menstrosa*, is an exemplification of all that is grotesque. In some cases, as in *Cupressus funebris* and *C. Nootkatensis* (*Thuopsis borealis* of gardens), the main stem is erect, and only the ultimate branches are pendulous. In one form of the common Spruce the general shape of the tree is columnar, the upper branches being erect and closely pressed up against the stem, while the lower ones are bent downwards and equally appressed to the main trunk. Now, what can be the cause of so diametrically opposite a condition of affairs in the same tree?

These variations in the phenomena witnessed do indeed render their explanation very difficult. We might suppose that the weight of the leaves had something to do with the downward direction of the branches, or that the recurved twigs facilitated the passage of the rain-drops to the roots; or we might attempt to conceal our ignorance by saying that it was due to gravitation or geotropism, or "apo-geotropism," as the case may be. But even supposing these Græco-Latin words conveyed a certain amount of truth, they would not and do not account for all the conditions. It is only here and there that we find weeping trees, but gravity and geotropism are universal phenomena. The weeping *Chrysanthemum* shows

before a recent meeting of the Scientific Committee of the Royal Horticultural Society was the first of its kind that has been seen or recorded. How and why did it arise? We must be humble, and say we do not know.

Regarded from a decorative point of view, we may mention, in addition to those above named, as specially worthy of attention *Thuja filifera* of gardens, the weeping form of *Cupressus pisifera*; the weeping Larch, of which a fine specimen from Messrs. Young's nursery at Milford was illustrated in our columns on April 7, 1888; the pendulous *Sophora* is also very characteristic, and, if not overdone, is very effective on lawns. The weeping form of the common Mountain Ash is too straggling to be considered ornamental, but, as a curiosity, it may be used with discretion. Weeping Ashes, Willows, Birches, Poplars, and Elms, are favourite subjects for the adornment of parks and pleasure-grounds; the pendulous Laburnum is less commonly met with. No one who has seen the gigantic Beech at Mr. Anthony Waterer's, or that at Messrs. Smith's nursery at Worcester, is likely to forget their impressive appearance.

To show how apparently capricious this weeping tendency is, we may extract the following passages from Darwin's *Variations of Animals and Plants* :—

"The weeping or pendulous growth of trees is strongly inherited in some cases, and, without any assignable reason, feebly in other cases. I have selected this character as an instance of capricious inheritance, because it is certainly not proper to the parent-species, and because, both sexes being borne on the same tree, both tend to transmit the same character. Even supposing that there may have been in some instances crossing with adjoining trees of the same species, it is not probable that all the seedlings would have been thus affected. At Moccas Court there is a famous Weeping Oak; many of its branches "are 30 feet long, and no thicker in any part of this length than a common rope." This tree transmits its weeping character, in a greater or less degree, to all its seedlings; some of the young Oaks being so flexible that they have to be supported by props, others not showing the weeping tendency till about twenty years old. Mr. Rivers fertilised, as he informs me, the flowers of a new Belgian Weeping Thorn (*Crataegus oxyacantha*) with pollen from a crimson not-weeping variety, and three young trees, "now six or seven years old, show a decided tendency to be pendulous, but as yet are not so much so as the mother plant." According to Mr. MacNab, seedlings from a magnificent Weeping Birch (*Betula alba*), in the Botanic Garden at Edinburgh, grew for the first ten or fifteen years upright, but then all became weepers like their parent. A Peach with pendulous branches, like those of the Weeping Willow, has been found capable of propagation by seed. Lastly, a weeping and almost prostrate Yew (*Taxus baccata*) was found in a hedge in Shropshire; it was a male, but one branch bore female flowers, and produced berries—these, being sown, produced seventeen trees, all of which had exactly the same peculiar habit with the parent-tree.

These facts, it might have been thought, would have been sufficient to render it probable that a pendulous habit would in all cases be strictly inherited. But let us look to the other side. Mr. MacNab sowed seeds of the Weeping Beech (*Fagus sylvatica*), but succeeded in raising only common Beeches. Mr. Rivers, at my request, raised a number of seedlings from three distinct varieties of Weeping Elm, and at least one of the parent-trees was so situated that it could not have been crossed by any other Elm; but none of the young trees, now about a foot or two in height, show the least signs of weeping. Mr. Rivers formerly sowed

above 50,000 seeds of the Weeping Ash (*Fraxinus excelsior*), and not a single seedling was in the least degree pendulous. In Germany, M. Boachmeyer raised a thousand seedlings with the same result. Nevertheless, Mr. Anderson, of the Chelsea Botanic Garden, by sowing seed from a Weeping Ash, which was found before the year 1780, in

to me by Mr. Rivers, which shows how capricious is the inheritance of a pendulous habit, is that a variety of another species of Ash (*F. lentiscifolia*), which was formerly pendulous, "now about twenty years old, has long lost this habit, every shoot being remarkably erect; but seedlings formerly raised from it were perfectly prostrate, the stems not



FIG. 158.—WEEPING SPRUCE AT IDE HILL, SEVENOAKS.

Cambridgeshire, raised several pendulous trees. Professor Henslow also informs me that some seedlings from a female Weeping Ash in the Botanic Garden at Cambridge were at first a little pendulous, but afterwards became quite upright; it is probable that this latter tree, which transmits to a certain extent its pendulous habit, was derived by a bud from the same original Cambridgeshire stock; whilst other Weeping Ashes may have had a distinct origin. But the crowning case, communicated

rising more than 2 inches above the ground." Thus the weeping variety of the common Ash, which has been extensively propagated by buds during a long period, did not, with Mr. Rivers, transmit its character to one seedling out of above twenty thousand; whereas the weeping variety of a second species of Ash, which could not, whilst grown in the same garden, retain its own weeping character, transmitted to its seedlings the pendulous habit in excess!"

SUBSTITUTES FOR SUMMER AND WINTER SPINACH.

THERE is no scarcity of Spinach in the months of May and June if the weather is of the ordinary character, but if it be unseasonably hot, the plants soon run to seed, and the needs of the family cannot be met. In order to tide over a time of scarcity, there are two plants belonging to the same family, which are very little inferior to common Spinach, that should be cultivated in most gardens. The New Zealand Spinach, *Tetragonia*

the produce young shoots should be removed, the main shoots being allowed to extend, which they do rapidly. Hence the need for ample space between the plants, 3 feet from plant to plant being not too great. *Chenopodium Bonus-Henricus*, or Good King Henry, is much grown by Lincolnshire peasantry. Strictly speaking, it is not a Spinach, but it is a good substitute for that plant, and is commonly known there as Mercury. The plant may be increased by seed or division, and the plants last several years if occasionally transplanted in the early spring into well-manured

for a large family. The plant does not suffer in a dry season, owing to the great depth to which the roots go. *G. Wythes*.

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM \times QUIRINUS.

A FLOWER of this singular-looking hybrid, raised by Reginald Young, Esq., Sefton Park, Liverpool, between the form of *C. siamense* known as *C. Appletonianum*, and *C. Spicerianum*, has been kindly sent for our inspection by the raiser. Though there is an elegant appearance about it, it will, probably, never become a general favourite. The upper sepal is white with a green base, and a central band of a purple tint; the remainder of the flower is whitish with a greenish-lilac tinge, and some slight purple markings on the petals. It may be likened to a small, pallid *C. Spicerianum* on a tall stalk.

Mr. Young also sent a fine branched inflorescence of *Epidendrum vitellinum*: "One of nine on a plant growing on a raft in my Odontoglossum-house. I have a row of eight similar plants all on rafts, and now in flower, which will make a nice Christmas show."

THE WEATHER IN WEST HERTS.

THE recent spell of warm weather, which lasted nearly three weeks, came to an end on the 21st. During this period the shade temperature exceeded 50° on as many as fifteen days, while the nights were all more or less warm for the midwinter month. With the break up of this warm period, however, the temperature fell very rapidly. For instance, on the 21st the maximum reading in shade rose as high as 53°, but two days later never exceeded 34°, while the difference in the night readings on these two occasions was almost equally marked, the exposed thermometer on the night of the former never falling lower than 36°, while on that of the latter the same thermometer showed 10° of frost. The ground temperatures are still very high for the time of year, being about 3° warmer at 2 feet deep, and about 5° warmer at 1 foot deep than is seasonable. Although rain has fallen on all but six days of the present month, the total fall amounts to less than 2 inches. During the past week about 2 gallons of rain-water has come through both percolation gauges. On two days of the week the record of sunshine proved unusually good, while four others were altogether sunless. Throughout the 22nd the atmosphere remained singularly calm, the mean rate of movement of the air at 30 feet above the ground being only about a quarter of a mile an hour. Owing to the prevalence of fog, the air continued excessively damp on several days of the week, and on two of them remained completely saturated with moisture during the whole day. *E. M., Berkhamsted, December 25, 1900.*

HOME CORRESPONDENCE.

SCOTTISH PEARS.—There are several varieties of Pears omitted from the list supplied by your valued correspondent, "B., Midlothian," in the issue for December '22, which gardeners residing in the counties of Yorkshire, Durham, Northumberland, Lancashire, Westmoreland, and Cumberland, which are parts of the country not more unfavourable to the ripening of Pears than Midlothian, would not like to be without. I may name Althorpe Crassane, Beurré d'Arenberg, Swan's Egg, Napoleon, Dunmore, Aston Town, Seckle, Van Mon's Léon le Clerc, Easter Beurré, Jargonelle, and Eyewood. The penultimate variety is nowhere in the south so good or of so fine a size as in the north; facts due probably to the longer days of the northern summer, and the cooler climate—just as Hacon's is incomparable is of better quality in the north. In the south, growth and maturing do not keep pace with each other.

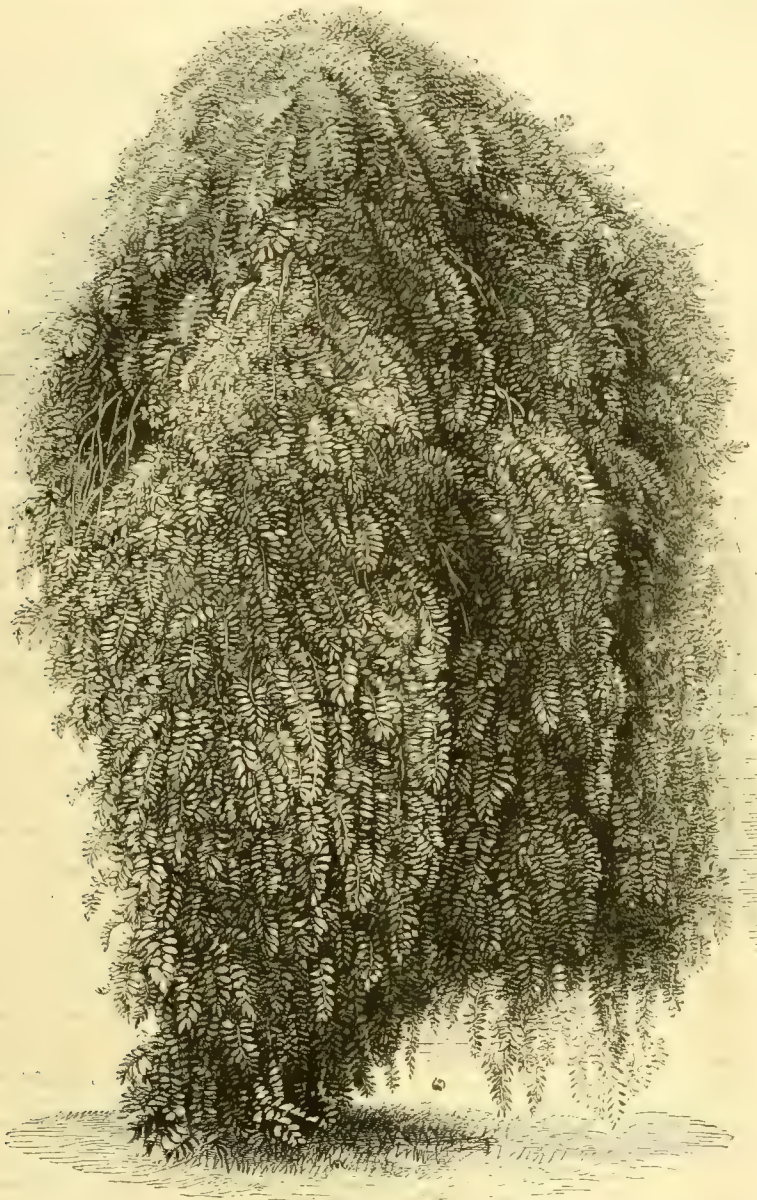


FIG. 159.—*SOPHORA JAPONICA PENDULA.*

expansa, for summer supplies, is continuous from June till November, and the other is *Chenopodium Bonus-Henricus*. The leaves of the first are succulent, rather like those of the Ice plant, and its habit is spreading when afforded good soil, and not crowded; the plant is very productive in the height of summer, and of great use at Syon. All the usual varieties of Spinach soon run to seed, in fact the plants are nothing but flower-stalks. Seeds of New Zealand Spinach are sown in 5-in. pots placed in a frame, and the plants set out when large enough. The seeds are very hard, and germinate slowly, hence the benefit derived from frame treatment, which enables us to rely upon the plants when the ordinary varieties fail. In taking

land. At times it is grown for its shoots, which are cooked similarly to Asparagus, but grown as Spinach, the plants are topped at 6 inches high, and then they branch out and produce quantities of leaves. The best winter substitute is Perpetual or Green Spinach-Beet, the leaves of which partake somewhat of the Spinach flavour; but in quality it cannot be compared with the true Spinach, although when the leaves are young they form a useful, palatable, early vegetable. The plants make rapid growth, are quite hardy, and will afford leaves all the year round, if the flower-stalk is removed early. The seed may be sown in April annually, in rows 20 inches apart, and the plants thinned to 9 inches. A hundred plants would afford plenty of pickings

With the single exception of Aston Town, none of the Pears named is good for anything away from a wall, and some of them—as Seckle, Van Mons, and Easter Beurré—should have a south or an east aspect, or preferably should be planted on each. The secret of cultivating Pears on walls is to afford a border at the least 2½ feet deep of good holding loam, lifting the extremities, or the entire mass of roots in the case of too vigorous young trees, once in three or four years, liberal dressings once every second year of rich manure forked in just beneath the surface of the border in which the fruit trees are growing; no mulch to keep the sunheat out of the border, and no crops of vegetables within 6 feet of the wall to exhaust the soil, and keep it cool by shading it. Summer pruning, that is the suppression of all unnecessary shoots, and the shortening back to one-third of their length of all foreright shoots must receive timely attention. Pears often set immense crops of fruits, which, if left unthinned or shed naturally, greatly weaken the tree. *B. Rance.*

RHIPSALIS HOULETTIANA.—I have grown this plant for many years (between thirty and forty), and large specimens too, but never in all that time did I ever see a fruit of it till this year, when I was much interested. It was rather an uncommon occurrence. I had it for a button-hole flower with the stem attached last year, and afterwards it was put in a pot by the side of another plant, and there it remained for a long time without showing any signs of growth; but after awhile a fruit showed itself, and ripened, also a very small growth about 1½ inch long. The fruit was about the size of a medium red Currant, but of a purplish colour, and that was the only fruit I ever saw, while some other species fruit very freely; but the most free of all to do so is *R. Cassytha*, whilst *R. floccosa* produces several which are very pretty, and of a good size, white tinted; and one called *R. gonocarpa* [?] has large dark berries, about the size of a black Currant, but I think not so dark, now ripe. Possibly the flowers get fertilised by flies. I have a very large plant now in flower and bud, with hundreds on it, but I do not ever remember seeing a fruit on it. It is much in the style of *R. Cassytha*, about a yard in diameter, and produces long aerial roots, which are very freely produced, but rare on *Cassytha* with me. *J. C.*

AUTUMN CAULIFLOWERS.—Cauliflowers and early Broccoli have this year been excellent in the gardens in our neighbourhood. Veitch's Autumn Giant Cauliflower especially, which was followed by their self-protecting autumn Broccoli; this has continued in use up to the present time. Every gardener should grow this very valuable variety of Broccoli, it being so well and naturally protected by its leaves, that a few degrees of frost do not injure the curd in the least degree. Our plants of Snow's Winter White Broccoli are now forming usable heads, well enveloped in their covering of leaves. If severe frost does not set in, we shall have this variety fit for the table throughout the month of January. These will be put into a cellar if hard frost appears imminent. What is often sent out as Snow's is not the true variety that was sold as such years ago; being more compact, the heads not so large, and better protected than that strain. *J. Easter, Nostell Priory Gardens, Wakefield.*

MUSA BASJOO (JAPONICA).—In the note on this plant last week (p. 456) the fruits are spoken of as though they were edible [No], and there is a suggestion that the plant is hardy in England. At Kew it was killed outside by the first frost experienced, but in the temperate-house it grows, flowers, and fruits annually. It may therefore be recommended for cultivation in conservatories, where the other Musas would catch cold. In stature it is less than *M. sapientum*, but is not unlike *M. rosacea*. The fruits are not edible; on the contrary, they are positively disagreeable to the palate. The plant is grown in southern Japan only for its fibre, from which cloth is made. Whilst on the subject of Bananas worth cultivating, I might point the numerous delicious-fruited varieties of *M. sapientum*, which are yet unknown to the ordinary consumer of Bananas, which are as superior to what he gets from his greengrocer or fruiterer as Cox's Orange Pippin is to a Crab. A selection of the best of these first-rate varieties has been got together at Kew, and two years ago sixteen were sent to the new Agricultural Department in the West Indies to be distributed from Dominica. They bear such names as "Pisang Kelat," "Pisang Radji,"

"Pisang Mas," "Ram Kela," "Champa," "Lady's Finger," &c. Some of these have fruited at Kew. "Ram Kela" has cylindrical brown-red fruits 6 to 8 inches long, and 2 inches in diameter, and the flesh is a rich yellow colour, with a flavour of Pineapple. If the Banana of the shops is worth a penny, then "Ram Kela" is worth a shilling. If anyone wishes to cultivate Bananas, he need not waste time on *M. Basjoo*, or even on *M. Paradisiaca* or *M. Cavendishi*, whilst there are these really meritorious varieties to be had. Of course, they require stove treatment, but so also do all Musas that have edible fruits. *W. W.* [Hakodate is in the southern part of Jesso, the most northerly of the three large islands which comprise the empire of Japan. The snowfall is usually very heavy there, and in that way the plants receive protection at the root, which in England they would rarely obtain. It was as a plant for outside decoration that it was recommended. *Ed.*]

TROPICAL FRUIT FOR CHRISTMAS.—In connection with Mr. Jackson's interesting paper on this subject, and your leading article, I should like to suggest to gardeners to grow the Japanese Persimmon (*Diospyros kaki*). On my tree, against a south wall, I had this year over 70 fine fruits, many of them over 3 inches through. I let them remain on the tree for some weeks after the leaves had fallen, and very handsome they looked. Then I picked them and put them on a greenhouse shelf, where they thoroughly ripened. If kept till completely soft, and of a rich red colour, and then sucked like a Melon, they are delicious. They are so hardy that I should like to get two or three more to plant in the open; but I cannot find them nearer than the Riviera. *Henry N. Ellacombe.*

CHRYSANTHEMUMS AT CHRISTMAS.—We have some late-struck plants of the following varieties which have been grown as bushes, making a good show at that date—viz.: *Etoile de Lyon*, *Mrs. H. Wicks*, *Abbé Mendenhall*, *H. Broomhead*, *Niveum*, *Mde. Carnot*, *Duchess of Wellington*, *M. A. de Salbeert*, *W. H. Lincoln*, *Phœbus*, *White Louis Boehmer*, and *Princess Victoria*. I consider *W. H. Lincoln* to be still one of the most effective yellow varieties. Smaller plants, about 1 foot high, are now effective standing amongst *Euphorbia pulcherrima* and *Browallia speciosa major*. Many kinds of flowering plants may be kept presentable for a long period of time if they are taken out of the stove or forcing-house into a warm, dry greenhouse and not wetted with the syringe—*Euphorbias* and *Begonias* especially. *W. A. Cook, Compton Bassett.*

PEARS FOR THE END OF DECEMBER.—I very much doubt if we have a Pear which excels Winter Nelis for flavour at this season. It possesses high flavour, and is melting and sweet. The fruit should be carefully gathered and stored, resting them on a layer of wood-wool on a shelf, with tissue paper over them. Before being eaten, the fruit should be placed in a warm room for 24 hours, then wrap each carefully in paper, and be sure that the fingers do not indent them. *Glout Morceau* is another fine Pear in season now; all the better for a day or two in a warm cupboard. *Knight's Monarch* is in season up to end of February. It is a very sweet and deliciously-perfumed fruit. The *Old Crassane* is another favourite, with rich flavour and buttery flesh, except towards the middle, which is gritty. *W. A. C.*

ADIANTUM CAPILLUS VENERIS IMBRICATUM.—Replying to Mr. Sandford's note on the above in the issue for December 15, 1900, I may mention that it was Mr. Drury who first drew my attention to the fact that the above could be propagated from the proliferous pinnules. I may not have been quite correct in using the term "bulbils," but that there are buds formed there is no doubt; and perhaps Mr. Drury would be good enough to give us his opinion on the matter. With regard to fertile fronds, since my previous notes on the subject I have seen fertile fronds on what was undoubtedly the true type. Messrs. Hill & Son of Edmonton had a plant at the Temple Show, and I have since seen other plants bearing fertile fronds. I understand Messrs. Hill & Son have raised seedlings, but I do not know if they have proved equal to the parent or true in character. There is always the possibility of a Fern which has proved barren for a number of years to make a departure. I believe *Pteris scaberula* had been grown in this country for a number of years before fertile fronds were found. Another curious instance of proli-

feration is found in *Scolopendrium vulgare Kelwayi*; this densely-crested variety is very prolific in the marginal buds which, when taken off carefully and treated as spores, soon start into growth. *A. Hemsley.*

THE LATE MR. PHILIP CROWLEY.—Our late and most warmly esteemed chairman of the Royal Horticultural Society's Fruit Committee has gone from us at last. That resignation, doubtless handed in with excessive reluctance, which now we all know, but oddly enough, not officially, did but precede that dread event which finally took him from life and from so wide a circle of sorrowing friends on Thursday of last week. Not many members of the present Fruit Committee have much personal remembrance of Mr. Crowley's immediate predecessors in the chair as chairmen, viz., Dr. Hogg and Mr. Henry Webb. Before these came one who happily is still with us, Mr. G. F. Wilson, and of his gentle disposition we all know. But there can be no doubt but that Mr. Philip Crowley had endeared himself to all who were privileged to sit round him at the Drill Hall. It was not possible to do other than like him. He was devoid of that cold stiffness which characterises some of his class too much. Essentially he was genial, courteous, kindly, and intensely fond of the duty which he sought so admirably to discharge. *A. D.*

DIAMOND JUBILEE GRAPE.—We had no intention of taking part in the discussion that is taking place in your columns in reference to the Diamond Jubilee Grape, but two letters that have recently appeared demand, as we think, some notice from us. On p. 422 of the issue of 8th inst., Mr. Kirk says that when we submitted our Grape to the Royal Horticultural Society we ought to have also submitted samples of its wood and foliage, with full particulars of its parentage, &c. Now, this is exactly what we did do; we not only placed samples of wood and foliage, with full particulars of its parentage before the committee, but we also submitted a letter from one of the best known Grape-growers in this country, who had seen this Grape here, also one from the late Mr. Dunn of Dalkeith. Besides, we mentioned—in case the Fruit Committee did not know—that the previous year the Grape had received a First-class Certificate from probably the most capable society in the country for granting such awards—the Royal Caledonian Horticultural Society. In a recent *Gardeners' Chronicle*, p. 431, "Caledonicus" has some interesting remarks under the title of "Pedigree Grape-vines, Old and New." He mentions new Vines with neither pedigree nor parentage, and advocates the appointment of a special committee to see that no new Grape without a stated pedigree should receive an award. It is difficult to understand what he means by neither "pedigree nor parentage." Could he give some instances of new, or alleged new Grapes that have come, say, before the Fruit Committee of the Royal Horticultural Society recently, when, if the system he advocates had been in force it would have been to the public advantage the withholding or granting of awards. In the same article "Caledonicus" refers to Diamond Jubilee Grape as follows—"Were any further facts needed to prove the need of a special committee . . . they may be found in the fact that the many letters written on the parentage of a recent novelty with a striking resemblance to the Black Morocco and Black Morocco Prince, and differing only in quality from both its parents." Now, after this you should be troubled with no more letters about the parentage of this recent novelty. Does not "Caledonicus" state plainly that its parents are Black Morocco and Morocco Prince? May we inform "Caledonicus" that Black Morocco and Morocco Prince are not the parents of Diamond Jubilee Grape! Neither of these two varieties have we ever grown here; its parents are two of the best known Grapes in cultivation, both with very creditable pedigrees indeed. Many of the assertions and conclusions stated in this discussion have been highly amusing to us. "Caledonicus" must pardon us, however, for thinking that this "brilliant guess" of his does not come under this category; we can only account for it as the outcome of the "flash and flare," the "glitter and glare" of a too vivid imagination, and trust that he will take the earliest opportunity of stating in your columns that he has not the slightest foundation of fact to prove his assertion. To your correspondent "A. D." we are much indebted for

the very great interest he is taking in our new Grape. As a member of the Fruit Committee his words ought to carry some weight, especially as he has been the first that we have seen to state publicly that the reason Diamond Jubilee Grape did not receive an award when placed before the Fruit Committee of the Royal Horticultural Society was, that it was too like Black Morocco. We should be still further indebted to "A. D." if he would quote from any rule, regulation, or instruction which the Royal Horticultural Society has for the guidance of its Fruit Committee which is to the effect that no award is to be made to a new Grape if it resemble any existing kind. *D. & W. Buchanan, Forth Vineyard, December 17, 1900.*

SAXIFRAGA UMBROSA UNDER TREES.—In Colonel Longstaff's pretty garden at Ridglands, Wimbledon, the prevailing idea for many years has been to so arrange the plants and shrubs that they will present a good appearance at all seasons, and special efforts have been made to avoid a bare

the plants are covered with elegant sprays of white and pink flowers, and in winter the rosette-like green leaves make a good carpet on what would otherwise be bare ground. Occasionally the tufts are broken up and replanted, and any surplus plants used in other situations where they are required. [This plan was practised by the late Miss Hope, of Wardie, Ed.] Few gardens in the neighbourhood of London contain such an interesting collection of outdoor plants and shrubs, and being on high ground, and well sheltered, many tender plants thrive well. For example, some plants of *Azalea indica* succeed in the open ground, *Santolina incana* (Lavender Cotton), forms a silvery hedge-like border, and *Lilium giganteum* has had a tall and stout inflorescence this year. *Harrow.*

MR. HARPUR-CREWE'S DOUBLE WALLFLOWER.—The interesting and timely article on "Outdoor Flowers in Winter," and its reference to the Wallflowers, leads me to think this a good time to draw further attention to this double Wallflower. I know of none so dependable and so useful,

moisture. A dry and sunny place is the most suitable position for this Wallflower; but I strike the cuttings, or rather slips, in partial shade, without any shading on the glass. I have grown this double yellow Wallflower for a good many years, and would not like to be without it, either in the dull season or in the brighter days of spring when flowers are plentiful. *S. Arnott, Carsehorn by Dumfries, N.B.*

NEW ZEALAND SPINACH.—To be able to gather New Zealand Spinach in the open ground on Nov. 21 must be, one would think, establishing a record. In the market garden of Mr. A. J. Robbins, Pope's Lane, Ealing, might be seen till lately a large breadth of the *Tetragonia*, from which Mr. Robbins has been able to make abundant gatherings during the summer months; and though the frost has lightly touched the foliage, the women could till lately be seen still gathering quantities, which, despite something like a glut of green stuff, appears to find a ready market. Winter Spinach also appears to be a heavy crop, and gatherings are being made from it daily. As Mr. Robbins grows large breadths of the New Zealand Spinach annually, it may be assumed he finds it a remunerative crop; and it certainly is a most reliable one on the occasion of hot dry summers. *R. D.*

Obituary.

PHILIP CROWLEY.—We are pained to have to record the death on the 20th inst. of Philip Crowley, of Waddon House, Croydon, in his sixty-fourth year. Retiring and somewhat abrupt in manner, he was really most sympathetic, and possessed a much larger store of information on various subjects than might have been supposed from his reticence. He was an excellent gardener, and deeply interested in horticultural matters. He was at one time a frequent attendant at the Linnean Society, and was the possessor of fine collections in various branches of natural history besides gardening. It is in connection with the Royal Horticultural Society that he will be best remembered. He formed an admirable Chairman of the Fruit Committee, bringing to the task industry, strict impartiality, ample knowledge, and excellent judgment.

In his capacity as Treasurer of the Society, he was also so thorough and so careful, that his loss will be severely felt in the council chamber.

He served the office of Master of the Gardeners' Company, and in that capacity entertained the foreign guests at the Hybridisation Conference.

He was buried in Shirley churchyard, by the Vicar of Croydon, assisted by 'deceased's friend, neighbour, and colleague, the Rev. W. Wilks, on the 24th inst.

The funeral of the deceased gentleman took place, on Monday last, at 2 P.M., in the picturesque churchyard of Shirley, near Croydon, of which parish Mr. Crowley's long and esteemed Secretary-colleague, the Rev. W. Wilks, is vicar. In this elevated spot, the fog that was so thick elsewhere was hardly in evidence, and during the service the sunshine quite pleasantly. There were in all some twenty-five carriages following the hearse, the top of which and the coffin within were covered with many beautiful floral tributes from relatives and friends, some hundred of whom came out to attend the service that was conducted by the Vicar of Croydon, assisted by the Rev. W. Wilks, M.A. The Fruit Committee, over which Mr. Crowley had so long presided, was represented by Mr. J. H. Veitch, Mr. Esling, and Mr. A. Dean; the permanent officials of the Society by Mr. S. T. Wright and Mr. F. Reader; and horticulture generally by Mr. H. J. Pearson, Mr. Osman, Mr. Sherwood, junr., and Mr. Roffey, of the Croydon Horticultural Society. One of the wreaths sent was from the Gardeners' Company. We learn that special notices of the funeral were issued to all members of the Council and the Fruit Committee. The foggy weather and the most inconvenient day (Christmas Eve) doubtless kept many away, including members of the Press, who had to do their work for the week on that day.



THE LATE PHILIP CROWLEY
TREASURER OF THE ROYAL HORTICULTURAL SOCIETY.

uninteresting appearance in any part of the garden. Herbaceous borders extend round the gardens, and contain the showier species of perennial flowering plants, together with Roses, and other flowering shrubs, and in the interior of the garden, pretty sand-stone rockeries are arranged, over which trail a great variety of close-growing rock-plants and shrubs. *Lithospermum fruticosum*, *Cyclamen Coum*, some *Auriculas*, and other plants being still in bloom, while from the Alpine Strawberries a few fruits were gathered during this month. Fragrant flowers, and shrubs with fragrant foliage, are also numerous, and provision has been made for a bright show from flowering-bulbs. There being many closely-planted trees in the gardens, the borders beneath them were for some time a trouble to Mr. Weedon, who has been for many years gardener at Ridglands, but one after the other these barren spaces were ornamented by planting beneath the trees, *Hypericums*, *Vincas*, the different varieties of *Ivy*, &c. But still there were spaces beneath the trees in some of the worst situations to fill, and some years ago Mr. Weedon planted some spare plants of *Saxifraga umbrosa* (London Pride), as the under-growth, and it was found to be one of the best plants for the purpose. In summer,

although it is not at its best until the spring. The name it bears must not be taken as signifying that it originated with that great flower-lover, the Rev. Harpur Crewe. It is really a very old plant, which is distinguished from the other double yellow forms by the name of Mr. Harpur Crewe, who brought it under the notice of many in his time, and I am told, distributed it among his friends. In my garden it is constantly in bloom from October to May, giving a few open flowers on each spike in the winter; and in April and May—sometimes, indeed, earlier—is a mass of golden yellow. It is to all intents and purposes a true perennial, and is perfectly hardy here, much more so than the seedling Wallflowers obtainable from purchased seed. I have here, on the top of a low rockery, a bush more than 3 feet across, and with more than 10 spikes showing each some open flowers. These are perfectly double, and are like little yellow balls at this season. Its propagation is of the easiest. Side shoots taken off with a heel are inserted a couple of inches into the garden soil, a surfacing of sand is added, and a handlight placed over after the sand is watered in. The cuttings are rooted in a few weeks, all the attention they need during rooting being the occasional lifting of the light to dry any surplus

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

DECEMBER 18.—Present: Dr. M. T. Masters, in the chair and the Rev. W. Wilks, Mr. Michael, Mr. Veitch, and the Rev. G. Henslow, Hon. Sec.

Quercus sessiliflora.—Mr. Wilks showed leaves with petioles and sessile acorns, of this variety, and remarked upon its rarity in the woods near Croydon. He had only met with two, but very handsome trees, about 100 yards apart, and probably 150 years old. He observed that this form of the Oak keeps its leaves longer than *Q. pedunculata*, which is the commoner of the two varieties. The leaves are inclined to be tomentose below, giving a silvery appearance. Sir J. D. Hooker, in the *Student's Flora*, records this character as belonging to *Q. intermedia*, a subspecies with short petioles and peduncles. Dr. Masters remarked upon the scarcity of *Q. sessiliflora* in Kent, and that it formerly, and perhaps still, grows at Brockley.

Maclura aurantiaca, fruit.—An unripe fruit of this American tree was sent by Mr. Jas. Vert, of the Gardens, Audley End. It is known as the Orange Orange, and is a native of the S. U. States. It is allied to the Mulberry, and, like that, has a compound globular fruit. The tree, being spinescent, is often kept dwarf, and employed as a hedge plant. The golden fruit, about the size of an Orange, is not edible.

Fruit from old Melon-seed.—Mr. Th. Sharp, Westbury, Wilts, describes his experience in raising Melons from old seed as giving better results than from young seed. His observations, which entirely confirm that of previous observers, are as follows:—"In a small Melon-house I noticed two plants which were very vigorous, and survived the first crop. They produced a good second crop of female flowers, but somewhat smaller, as were the male flowers, than usual. In the same house was a batch of young plants with good male blossoms. I fertilised the females of the older plant with the pollen from the younger. The crop of fruit was nearly double that of the first. The fruits were large and of excellent quality throughout. A year or two afterwards, having to supply ripe Melons in May and onwards, and having noticed that plants from old seed produced a less succulent growth than did those from young seed, for four years I raised my plants from old seed, always growing a few plants from new seed. I then fertilised the female flowers of the older plants with the pollen of the younger, which plants were invariably the more robust. The resulting fruits were more reliable in good quality, and though the female flowers had been small, the fruits were large, weighing from 3 to 7 lb." Mr. Henslow has given very similar experiences on the continent in his *Origin of Floral Structures*, p. 247. M. E. Cazzola, in addition, found that Melon-plants raised from fresh seeds bore a larger proportion of male than female flowers; while older seed bore more female flowers than male.

Ornithogalum lacteum.—Mr. Veitch brought a beautiful spike of this plant in full blossom. It was especially interesting as having been cut in S. Africa from Table Mountain on November 27. It was then put into the refrigerating chamber of a ship on the 28th, and thus lasted exactly three weeks in a perfectly fresh state, illustrating the possibilities of the transport of cut blossoms from the colonies.

Seakale, defective.—Mrs. A. Williams, of Coed-y-Marp, Welsipool, sent samples of Seakale; they were thin, and carried numerous buds on the crowns. This was the result of defective soil, described as a stiff one, and damp, imperfect nourishment, and neglect in removing the superfluous buds, instead of leaving one only in which the energy should be concentrated.

Elm-trees at Bath Dyinn.—Mr. Milburn, Superintendent of the Botanical Gardens, Victoria Park, Bath, records the dying of some five Elms:—"The trees were planted between fifty and sixty years ago. They form part of a line which still remain apparently healthy. The trees in question are situated on the base of a sloping bank running E. and W. On the south side is a stone wall from 6 to 8 feet in the foundations. The subsoil is blue clay. Consequently, the trees have root room only on one side. Moreover, the last two or three seasons have been very dry. In addition to this a destructor has been erected 200 yards off; also close at hand are the gasworks. Matter is conveyed in the air from both these works, as it is deposited in the form of a black oily seum on the lake situated a little north of the Elms." As Professor F. Oliver showed in his paper on "The Effects of Urban Fog upon Cultivated Plants" (*Journal R. H. S.*, xvi. p. 1), the extremely poisonous nature of vaporised products there would seem to be a plausible cause of injurious influence upon the trees, apart from the want of freedom in root production.

Double Cyclamen.—Dr. Masters reported as follows upon the specimen sent to the last meeting from Messrs. Kerr, of Liverpool:—"In these flowers there were five sepals, five distinct petals, no stamens, but several rows of additional petals. The ovary was normal."

PLANTS FROM CAMBRIDGE BOTANIC GARDENS.

Mr. R. L. LYNN forwarded the following interesting species, for which a unanimous Vote of Thanks was passed, and to the three first named were awarded Botanical Certificates: *Kleinia pedicula*, with fleshy stems and scarlet heads of flowers, from Somaliland; *Kalanchoe marmorata*, another

fleshy plant, and *Nemaanthus longipes* (Gesneriaceae). A few observations are here added. The genus *Kleinia* is a Groundsel, or *Senecio* with fleshy stems; *K. nerifolia*, the "Barode," being a native of the Canary Islands; most of the species are South African. *K. pendula* has a rod-like, fleshy stem the thickness of a pencil, from which a long pendulous peduncle arises at the apex. The leaves are reduced to minute prickles. *Kalanchoe* belongs to the Crassulaceae, is from tropical Africa, but has species in Asia and Brazil. It has tubular, greenish-white flowers, nearly 6 inches in length, and fleshy obovate leaves.

Phyllaea cricoides (Rhamnaceae), called Bruyere du Cop, is a Heath-like plant, with terminal clusters of minute white flowers.

Lindenbergia grandiflora (Scrophulariaceae), figured in the October number of the *Botanical Magazine*, is a species with yellow flowers, and nearly allied to *Mimulus*. There are eight species in E. Africa, Arabia, the East Indies, and the Malay Archipelago.

Nemaanthus longipes has sub-fleshy lanceolate leaves, and long scarlet tubular flowers protruding from one side of the calyx. It belongs to Gesneriaceae. There are only three or four species, all natives of Brazil.

Senecio vulgaris × *S. squalidus*, a remarkable natural hybrid between these two British plants, the former being the Groundsel, and the latter naturalised on old walls at Oxford and elsewhere. The flowers are small (half an inch from tips of ray florets), with the foliage of Groundsel. It comes perfectly true from seed, and has commenced being a weed in Cambridge Botanic Garden. It is said to grow wild with its parents near Cork.

Cardamine chenopodiifolia is remarkable for bearing perfect seed, both above and below ground. Mr. LYNN observes that he has two sets of plants—one always raised from seeds out of the subterranean pods, and another set always raised from the other seeds, in order to see whether in course of time any modification of habit may arise in consequence of growing always from seed produced in the same way. The white flowers are excessively minute, and are fertilised in bud, the anthers being closely adpressed to the globular stigma, the conditions usually prevailing with normally self-fertilising Crucifers. The subterranean pods are white and spindle shaped, and a quarter of an inch in length. They contain one or two seeds, separated by a delicate white membranous false dissepiment. They are attached to slender pedicels, 1 inch long, which turn abruptly downwards from their point of insertion in the stem. These are doubtless the result of cleistogamous buds.

Heliophora nutans.—The flower consists of five or four sepals, no petals, many stamens, the pistil having a long style and truncated apex, not spreading into an umbrellalike expansion as in the allied genus *Sarracenia*. There is but one species, a native of Guiana.

Begonia renosa.—This is remarkable on account of its fleshy leaves, and large scarious stipules, both features being characteristic of hot and dry climates.

Ceropegia dichotoma, with tubular flowers, the tips only of the corolla remaining coherent. *C. stapeliiformis*, and *C. elegans* and *C. Woodii* all remarkable fleshy-climbers, the last bearing tubers and pendulous. It has been figured from the Cambridge plant in *Bot. Mag.* of March, 1900.

Bomplandia geminiflora (Polemoniaceae) is remarkable for the corolla being two-lipped, the two upper petals cohering above the tube, and provided with a white-lined base as a "guide," the three other petals, upon which the subdeclinate stamens rest, project forward. The long style, with three spreading stigmas, project a quarter of an inch beyond the anthers. It is a monotypic genus, of one species only, and a native of Mexico.

Nepenthes Viellardi, a species of Pitcher Plant, with small pitchers 3 inches long, and remarkable for the white border round the incurved red margin. The lid is red, and the under side of the leaves russet but smooth.

WARGRAVE GARDENERS.

DECEMBER 5.—A fortnightly meeting was held on the above date, when Mr. W. Pope, gr. to J. P. White, Esq., of "The Willows," Wargrave, read a practical paper on the "Culture of Caladiums." He described the soil best suited to the plant's requirements, heat requisite, winter care of tubers, water and syringing, pests, &c.; and evoked a capital discussion in which many members took part. Some fine flowers, fruit, and vegetables were staged for competition.

DECEMBER 19.—This Society met for the last time in 1900 on the above date, when Mr. T. Haskett, gr. to J. W. Rhodes, Esq., Hennerton House, read a very interesting paper on "Pears," describing the different ways of planting the trees, the soil best suited to their requirements, summer and winter pruning, and their cultivation generally. The Pear-midge he had found the most troublesome insect pest.

Some good specimens of flowers and vegetables were exhibited. H. C.

LINNEAN.

DECEMBER 6.—Mr. F. D. GODMAN, F.R.S., Vice-President, in the Chair.

Dr. REXFELD showed a specimen of a marine monactylodinous plant, *Halophila stipulacea*, from Tuticorin in Southern India, sent by Mr. Edgar Thurston. This

species is not included in the *Flora of British India*, nor in Trimen's *Ceylon Flora*, a plant found by Dr. Harvey at Trincomalee, and thus determined by Thwaites, being assigned to the commoner *H. ovata*, Gaud. *H. stipulacea* occurs in the Red Sea, the Mascarene Islands, and Rodriguez.

The Rev. JOHN GERARD, F.L.S., exhibited some abnormally large shells of the Swan Mussel, *Anodonta cyanea*, forwarded from Cloughton, Garstang, Lancashire, by Mr. W. Fitzherbert, Brockholes. The three largest of these measured 8.75 inches, 8 inches, and 7.5 inches in width; these measurements being considerably in excess of those given in the text-books, and of the examples figured as *Mytilus cynceus* in *Trans. Linn. Soc.*, vol. viii., pl. 3, p. 109; and as *Mytilus staggalis* (from Kew Gardens) in Sowerby's *British Miscellany*, vol. i., pl. xvi., p. 33. It was stated that amongst other specimens found in the pond at Cloughton, when drained, there was one of 9 inches, twenty-eight measuring from 5 to 9 inches, and about a hundred of 7 to 8 inches.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

DECEMBER 13.—There was a very nice display of Orchids at this meeting, Cyripediums preponderating. J. LEEMANN, Esq., West Bank House, Heaton Mersey (gr. Mr. Edge), exhibited a plant of *Cyripedium Leeanum magnificum* "Ball's variety," which had previously been certificated by the Society, as had also *C. L. var. giganteum*, from the same collection. *Cyripedium* × *Statterianum* Pickering Lodge var., a very dark coloured form, received an Award of Merit, the same award being given to *C. × J. Howes*. *C. insigne* var. *Luciani* was also shown from this collection, and proved to be very distinct, the flowers being of a very bright orange colour, with no discernible spotting (First-class Certificate).

J. R. FLETCHER, Esq., J.P., The Uplands, Whitefield (gr. Mr. Talbot), made his debut as an exhibitor, and gained Awards of Merit for two good *Cyripediums*, viz., *C. × Mrs. J. R. Fletcher*, a fine bold flower, the result of crossing *C. × T. B. Haywood*, and an unknown species; and *C. × Lawrenceanum* × *Mastersianum*, a very good plant, quite distinct, with the mahogany colour of the latter parent pervading the whole flower.

Mrs. BRIGGS-BURY, Bank House, Accrington (gr. Mr. Wilkinson), exhibited a fine plant of *Cyripedium insigne* Harefield Hall var., which has so often been noted, and the previous award was confirmed. A very distinct yellow *C. insigne* came from the same collection, it appears to be identical with the one figured a fortnight ago in the *Gardeners' Chronicle* as *C. i. var. Chantini Lindeni*, answering exactly to the form and description of the latter (First-class Certificate). *C. × "Queen Mab"* received an Award of Merit. *Odontoglossum crispum* var. "Queen Helene," one of the smaller section of crispum, beautifully shaped, and the blotching which is heavy being grouped in the centre of the flower, was shown for the first time (First-class Certificate).

A. WARBURTON, Esq., Vine House, Haslingden (gr. Mr. Lofthouse), showed two excellent *Cyripedium insigne*, the variety *Luciani* noted above, and the beautiful *Sanderianum*, both of which received First-class Certificates.

W. WATSON, Esq., Urnston Lane, Stretford, exhibited a group of plants almost entirely consisting of *Cyripediums*, including *C. insigne* Sander, *C. bellatulum* var. *album*, *C. Leeanum giganteum*, &c., receiving an award of a Silver Medal.

T. BAXTER, Esq., Morecambe (gr. Mr. Roberts), staged a nice group of *Odontoglossums*, for which a Silver Medal was awarded. *O. crispum* var. "Florence," and *O. c. var. "Lilian"*, two fine unspotted forms, received Awards of Merit.

O. O. WRIGLEY, Esq., Bridge Hall, Bury (gr. Mr. Rogers), had a splendid lot of *Cyripediums*. Mr. Rogers in the last few years has done excellently well with Mr. Wrigley's favourite plants, and deserves great credit. *C. insigne* var. "Berry-anum" is one of the mammoth forms of the type, and received on this occasion a First-class Certificate; a very fine plant of *C. × Niobe* was shown, well grown, and bearing several blooms; *C. × Spicero* × *nitens* received an Award of Merit (Silver Medal for group).

T. STATTER, Esq., Stand Hall, Whitefield (gr. Mr. Johnson), exhibited a few beautiful plants, the finest of which was the Stand Hall variety of *Cyripedium × triumphans*, which may be described as "rich and rare"; the previous award of a First-class Certificate was confirmed in this case. Other fine plants in the collection were *C. × Maudie* (First-class Certificate), and *C. × "Frances" Curtisii* × *callosum* (Award of Merit).

W. DUCKWORTH, Esq., Shawe Hall, Flixton (gr. Mr. Tindall) had a fine plant of *Cymbidium Mastersii* full of bloom, for which an Award of Merit and a Cultural Certificate were awarded; a fine plant of *Cyripedium Leeanum giganteum*, the flowers of which were of extra large size, was much admired, and the previous award to this plant was confirmed.

Messrs. F. SANDER & Co., St. Albans, had a remarkable plant in *Cyripedium × Flambeau* = *Lawrenceanum* × *Harrisianum superbum*, the colour being a vivid purple-claret, and the lower sepal nearly twice the size of the dorsal sepal (First-class Certificate).

J. W. MOORE, Ltd., Rawdon, Leeds, had three good plants of *Cymbidium Traceyanum*, for which a Cultural Certificate was awarded.

Mr. A. J. KEELING, Bingley, Yorks, had a nice group of plants containing a few good varieties of *Cyripediums* (Vote of Thanks).

Mr. J. ROBSON, Altrincham, had a few good plants, for one of which he received an Award of Merit, viz., a hybrid

between *Cypripedium* × *Leeanum* × *C. Bruno*; a plant of *Odontoglossum crispum* var. *Bonnyanum* was also present in the group (Vote of Thanks).

Mr. J. CUMER, Cheltenham, had a splendid group of choice plants, none of which, however, came before the committee. The group included two plants of *Cypripedium insigne* Sandere; *C. insigne magnificum*, and *C. i. majesticum*; two very handsome forms of *insigne*; *C. insigne montanum* aureum was very distinct, as was also *C. × Leeanum aureum*, and three finely-flowered plants of *C. × Leeanum giganteum* (Silver Medal). P. B.

NATIONAL CARNATION & PICOTEE.

THE annual meeting of this flourishing society took place at the Horticultural Club, Hotel Windsor, on the 22nd inst., Mr. Martin Smith, the President, in the chair. There was a good representation of cultivators. No report of the proceedings for the past year was presented; this is prepared subsequently by the Secretary, and is printed with the report. The financial statement was decidedly assuring, though there appeared to be a falling off in the amount of the balance carried forward. The balance from last year was £209 10s. 10d.; subscriptions had brought in £245 19s., in addition to a contribution of £50 from the Crystal Palace Company. On the other side, the sum of £235 6s. 6d. had been paid in prizes; printing, stationery, &c., amounted to £64 8s. 1d. Special circumstances having required a larger expenditure than is usual, there were some other items of outlay, the sum of £177 15s. 1d. being carried forward. Mr. Martin Smith was re-elected president; Mr. T. E. Henwood, secretary and treasurer; the vice-presidents and committee were also re-elected. The schedule of prizes being considered sufficiently comprehensive and ample, no addition was made to the classes, but a few added prizes were inserted. It was agreed that subject to the date being a convenient one for the Crystal Palace, the annual exhibition next year should take place on July 19, and let the incidence of the season be what it may, this date should not be altered.

Mr. T. A. Wellesly called attention to the perfunctory manner in which the Premier blooms had been selected of late, and moved that judges be specially appointed for the purpose, and this was agreed to; an objection on the score that qualified judges are limited in number, was met by the assurance that there are ample about the country. The selection of judges for this and other classes was left to the Committee. Mr. S. A. Weeks submitted a motion for two exhibitions being held each year: one at an early date for the white grounds, flakes, bizarres, and Picotees; and the other a little later for the selfs, fancies, and yellow grounds. Objection was urged to this course on the ground of expense and inconvenience, and eventually it was agreed that the date fixed for the show in 1901, July 19, would probably be found suitable for all the sections of flowers.

The report of the committee appointed to revise the list of yellow-ground Picotees which is published in the schedule of prizes, was read and adopted; it was to the effect that *Economia*, *May Queen*, *Mrs. Willie Spencer*, *Primrose Day*, and *Stanley Wrightson* should be deleted from the list, and placed with the fancies, and the following added to the yellow-ground Picotees:—*Lady St. Oswald*, *Lanzan*, *Heliodorus*, *Daniel Defoe*, *Henry Falkland*, *Edna May*, *Caracée*, *Alcinous*, *Edith*, *Galatea*, and *Anchor*—all, it was said, raised by the President.

A cordial vote of thanks was passed to Mr. Martin Smith for presiding.

NATIONAL AURICULA AND PRIMULA.

DECEMBER 22.—On the above date there was held at the Horticultural Club the annual meeting of this society, Mr. James Douglas occupying the chair. The burden of the report made by the secretary was to the effect that the variable weather which happened at the time when the plants were blooming materially affected the quality of the bloom, which was by no means as good as usual. Other departments of the show suffered from the same cause; but there is no reason whatever to deplore any lack of interest in the society and its work. The subscriptions from members are maintained, and a substantial balance is carried forward to next year. Sir John T. D. Llewellyn, Bart., was re-elected President, as were also the Vice-Presidents, and Mr. T. E. Henwood, Secretary and Treasurer, while Mr. James Douglas was appointed Chairman in the place of the Rev. H. H. D'Ombraim, resigned; and Messrs. A. R. Brown and E. L. Goodes was added to the committee. It was resolved that the schedule as last year be adopted, and that the usual exhibition take place in the month of April next. A vote of thanks was passed to the chairman for presiding.

HYBRID-FORMS OR VARIETIES?—In the "Book Notice" of *Les Odontoglossum*, in a recent number of the *Gardeners' Chronicle*, there occurs an axiom that may be referred to as being lucid, instructive, and opportune. The terms "fertilisation," "pollination," "hybridisation," and "artificial crossing" without the prefix of inter to one or the other of them, seem to be sufficient to puzzle generally well-informed people as much as the correct classification of the progenies emanating

therefrom. The statement you make "that plants which are derived from crossing two distinct species cannot be called varieties of either," deserves the distinction of being displayed in capitals, and repeated until remembered by readers. It should at least be helpful in many cases where a confusion of terms has led to a worse confusion of ideas. This reminds one of quite a recent occurrence that may be cited *apropos* of this. In a newspaper report of a lecture "On the Cross Fertilisation of Farm Plants," given in the west of England to a scientific audience, the terms "composite" or "compound crossing" appear prominently as applied to the inter-crossing of varieties, and at the conclusion of the lecture exception was taken to the somewhat loose use of the term "cross-fertilisation," it being stated that "the crossing of different varieties, whether of Wheat or any other plant, was hybridisation, and not cross-fertilisation." Then, what becomes of the "composite" or "compound" crossing? It really seems as though it would be preferable to follow a less distracting course with regard to elucidating the methods of improving field crops, although it necessitated the limitation of terms to those usually employed to denote the improvement made in the breeding of the live stock of the farm. Vegetable hybrids or mules would be similarly subject to the same laws of Nature as hitherto, notwithstanding the complacently satisfying of ourselves to the contrary when in the pursuit of a scientific *ignis fatuus*. It would appear to be not altogether needless to remark that in effecting the improvement of strains of flowering plants, "cross fertilisation" is a very important agency, and it is, perhaps, in this connection that the term has its popular significance and fitting application. The term "hybridisation" denotes something more than this, as understood in relation to the inter-crossing of species, for the purpose of obtaining hybrid forms. These observations emanate from one who has had some experience of the artificial cross-fertilisation of flowers, but who, nevertheless, cannot claim to be a successful hybridist, or to have seen a progeny from a veritable seed-bearing hybrid parent resulting from secondary hybridisation. J. E. J.

AIDS TO SUCCESSFUL CULTIVATION.

THE last three summer seasons have been fraught with much anxiety to the kitchen-gardener, owing to a period of drought occurring just at that time when most of his crops have been least able to endure it, on account either of their natural tenderness or their young condition. Man being unable to command rain to fall, it behoves him to adopt means to mitigate the evils attending its absence. Foremost of these means is, of course, watering by hand; a long, tedious, and not altogether successful task, but which may be rendered more effectual and less frequently required by the adoption of a few simple, cultural methods.

Crops on light and porous soils naturally suffer most; and it is to these that my remarks specially apply. Digging of such soils, in my opinion, should be deferred till early spring, as then such manurial matters as they may contain would be saved from the natural drainage; any weeds that may have collected upon the plot during winter would help to support the young, growing, spring crop; and the natural moisture in the soil and weeds would help in the germination of the seeds of the crop.

A plan I have adopted in gardens under my own care, and which I can confidently recommend to others, is to drill deeply all such crops as are laid down in beds, such as Carrots, Spinach, Turnips, and the like, maintaining a slight ridge of soil between the rows; and all drills are drawn transversely with a slope. The latter practice is usually reversed on the typical warm border; but I would condemn it, as the transverse rows of growing crops, and the intervening slight ridges of soil help to contain water, whether it be natural from a heavy rainfall, or artificially applied, in the place where it is most wanted.

Such crops as French Beans, Lettuce, Peas, summer Cauliflowers, and the like, are best grown in shallow trenches—3 inches to 4 inches deep will

be sufficient; also transversely with any slope on which they may be growing, the better to contain water in its proper place, and if after each watering a little dry soil is frittered away from the intervening ridges, the moisture will be conserved for a more lengthened period, on the principle that a layer of loose, dry soil acts as an obstacle to the evaporation caused by the rays of the sun and by winds. Any watering that is done should, where possible, be followed by deep hoeing as soon as the soil is free from stickiness, and before it becomes quite dry again. We have in the hoe not only a means of killing weeds, but the best means of conserving moisture in the soil, short of a proper manurial mulch.

THE ORCHARD.

What is true of the kitchen-garden is equally true in this department, for one good, sound fruit is worth four or five indifferent ones, and a handsome and prolific tree is a lasting credit to the cultivator. I have no love for grass-orchards, for where I have seen many good trees growing in grass, I have seen very many bad ones, and in dry summers they invariably suffer from the tax the grass puts upon the moisture in the soil, without receiving much compensating value for it as a mulch.

It will give much less trouble if young trees are planted in a hollow, not one with a sharp slope towards the trunk, but a wide, shallow basin, so arranged that it will drain the surrounding soil.

On naturally light soils, trees rarely get sufficient water when bearing heavy crops; small and malformed fruits being a natural result. Where time can be spared—and it must be spared if fine fruits are wanted, they must be watered twice or thrice during the summer; following the watering with a mulch, failing that, with a deep hoeing of the soil to a depth of 3 to 4 inches, crumbling the soil to a fine powder. A large fruit-grower in this district, whose originality and departure from text-book precision of action is justified by the results he achieves, tills his orchards by means of a light harrow, which a man drags about from day to day, thus opening the soil to feathered scavengers of insect pests, and loosening up a non-conducting surface of soil which serves as a conservator of moisture.

A word or two on wall trees may not be out of place here. A rule-of-thumb system of planting has prevailed with these for a long time; trees have been planted on raised borders, sometimes abnormally high, irrespective of the hygrometric conditions and characters of the soil in which they have to grow. Obviously, to plant a tree on an eminence of light, porous soil, is to entail an additional amount of work when time can least be spared, and with what counter-balancing advantage? None! There is no reason why they should not be planted on a level or in a shallow basin, and every reason why they should be. I may here quote my own experience:—In 1898, so much time was taken up at Isleworth in watering wall-trees, which had been planted on a raised border, that it was resolved to level the top for a distance of 8 feet from the wall. This was done, and an espalier 6 feet high was strained parallel with the wall, and 6 feet distant from it. On this espalier, Peaches, Nectarines, Pears, and Tomatos, were trained, with a view to shading the intervening alley, and also that the trees, &c., on the espalier might benefit by the heat the wall reflected. The shade thrown by the espalier at midsummer scarcely reached the base of the wall, so that the wall-trees benefited considerably from having their roots in a cooler temperature without any detrimental effects of shade on their tops. The venture as a whole was successful; the trees on the espalier look quite as happy as those on the wall, and the fruits of the Tomatos do not crack from excessive heat. The plan is one I can fully recommend.

THE FLOWER-GARDEN AND PLEASURE-GROUNDS.

Whilst the disposition of soil, noted in a previous paragraph, applies equally to this depart-

ment, a few special points stand out from the rest, calling for particular notice, and the first is the practice of raising flower-beds and borders to a considerable height. In dry seasons, the practice is injurious so far as the plants are concerned. The soil, parched by the searching wind and by the rays of the sun, when watered by hand, or by occasional storms, is washed down to the verges, necessitating frequent attention to these as regards clearing and re-edging; moreover, the water that washed the soil down is lost to the plants on the top, the place where it is needed most. The only objection to reducing such beds, &c., to a general level would be some loss of effect from a distance, but this would be compensated for by the greater vigour and height of the plants when growing in a cooler and moister medium. Moreover, plants on level beds could be watered with greater efficiency and thoroughness, as every drop would be contained in its proper place to benefit the plants it was intended for.

Other plants which suffer from drought are the climbers on dwellings: their position is invariably a hot one, as often as not in soil overlying a lot of builder's rubbish, and in many cases, I know, with little else but gravel paths in which to grow. *Geo. B. Mallett.*

MARKETS.

COVENT GARDEN, DECEMBER 27.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz. 5 0-7 0	Ferns, small, per 100 4 0-6 0
Arbor-vitæ, var. doz. 6 0-8 0	Ficus elastica, each 1 6-7 6
Aspidistras, p. doz. 18 0-36 0	Foliage plants, var., each 1 0-5 0
— specimen, each 5 0-10 6	Lily of Valley, each 1 9-3 0
Cannas, per dozen 18 0—	Lycopodiums, doz. 8 0-4 0
Crotons, per doz. 18 0-30 0	Marguerites, per dozen 8 0-12 0
Cyclamen, per doz. 8 0-10 0	Myrtles, per dozen 6 0-9 0
Dracenas, var., per dozen 12 0-80 0	Palms, various, ea. 1 0-15 0
— viridis, per doz. 9 0-18 0	— specimens, each 21 0-63 0
Ericas, var., per doz. 12 0-36 0	Pelargoniums, scarlet, per dozen 8 0-12 0
Eunymus, various, per dozen 6 0-18 0	— Ivyleaf, per doz. 8 0-10 0
Evergreens, var., per dozen 4 0-18 0	Spireas, per dozen 6 0-12 0
Ferns, in variety, per dozen 4 0-18 0	

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus "Fern," bunch 1 0-2 0	Maidenhair Fern, per doz. bunches 4 0-8 0
Carnations, per doz. blooms 1 0-2 0	Marguerites, p. doz. bunches 2 0-4 0
Cestreyas, per dozen 9 0-12 0	Mignonette, per doz. bunches 4 0-6 0
Cheris, per dozen 2 0-4 0	Lychees, per doz. 8 0-15 0
Gardenias, per doz. 1 6-2 6	Odontoglossums, per dozen 6 0-9 0
Lilium Harrisii, per dozen blooms 4 0-6 0	Roses, Tea, white, per dozen 1 0-3 0
Lilium lancifolium album, per dozen blooms 1 6-3 0	— Safrano, per dozen 1 0-2 0
Lilium rubrum, per dozen 3 0-5 0	— Catherine Mermet, per dozen 3 0-6 0
Lilium longiflorum, per dozen 4 0-6 0	Smilax, per bunch 3 0-5 0
Lily of Valley, per doz. bunches 6 0-16 0	Tuberose, per doz. blooms 0 3-0 6

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, English, per bushel 2 6-4 6	Grapes, Musc. A., lb. 5 0-6 0
conkers, large 2 0-4 6	— B., per lb. 3 9-4 0
various 2 0-4 6	— Almeida, brls. 16 0-25 0
Cox's, in sieves 3 0-5 0	Lemons, case 8 6-15 0
Kings, bush 3 0-4 6	Oranges, Teneriffe, case 2 6-4 0
Blenheim, bush 3 0-5 6	— Murcia, case 7 0—
Ribstones, bushel 4 0-6 6	— Tangerine, box 0 9-1 6
— Nova Scotia, per barrel 14 0-20 0	— 200 6 6—
— Californian, per box 9 0-10 0	— Jaffa, case 8 6—
— American New Town Pippins, in barrels 30 0—	— Valencia 12 0-18 0
Bananas, bunch 8 0-13 0	Pears, home grown in sieves 2 0-4 0
— loose, per doz. 1 0-1 6	— stewing, crates 4 6—
Cebnuts, lb. 0 4-0 5	— stewing, in box 2 6—
Cranberries, case 16 0—	— Californian, half case, and Glout Morceau 16 0—
— quart 0 7—	— Californian Easter Beurre 18 0—
— Russian kegs 1 9—	— French, Glout Morceau, crates 4 0—
Chestnuts, per bag 7 0-10 0	Persimmons or Kaki, per doz. 3 0-4 0
— Italian, 17 0-18 0	Pines, each 3 6-6 0
Eastard Apples, per dozen 4 0-6 0	Sapucaia nuts, lb. 1 3—
Grapes, Alicante, per lb. 0 10-1 9	Walnuts, bag, 34 lb. 6 6—
— Colmar, A 1 6-2 6	— in bags, large 15 0—
— Colmar, B 0 8-1 3	

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz. 3 0-4 0	Leeks, per dozen bunches 1 6—
— Jerusalem, sieve 1 0-1 3	Lettuce, French Cabbage, doz. 1 0—
— Stachys or Chinese, per lb. 0 6—	Mint, per doz. bunches, new 5 0—
Asparagus, Sprue, Paris Green, bun. 0 8—	Mushrooms, house, per lb. 0 8-0 10
Beans, dwf. Madeira, per bkt. 2 6-3 0	Onions, picklers, per sieve 3 0—
— Ch. Islds. and home, dwf., new, per lb. 1 6-2 0	— per bag 3 0-4 6
Barb de Capucine 0 4—	— cases 6 0-7 0
Beans, French, pkts. 0 6—	— English, p. cwt. bag 4 0-4 6
Betroot, bushel 1 3-1 6	Parley, 12 bunches 1 0-1 6
Beet, per dozen 0 6—	— per sieve 1 0—
Brussel Sprouts, per sieve 1 6-2 6	Parsnips, in cwt. bags 2 0-2 6
Cabbage, tally 1 0-2 0	Potatoes, per ton 80 0-130 0
— dozen 0 6—	— New, per cwt. 16 0-18 0
Carrots, 12 bunches 1 6-2 0	Radishes, per 12 bunches 1 0—
— washed, in cwt. bags 2 0-2 6	Rhubarb, Yorks, doz 1 6—
Cardiflowers, per doz. 1 6-2 0	Salad, small, punnets, per dozen 1 3—
— tally 6 0-9 0	Savoy, per doz. 0 6-1 0
Celeriac, per dozen 1 6-2 0	— per tally 2 0-4 0
Celery, doz. bndls. 10 0-14 0	Seakale, doz punnets 10 0-12 0
— unwashed, doz. 8 0-10 0	Shallots, new, p. lb. 0 2-1 0
Chicory, per lb. 0 3—	Spinach, persieve 0 6-0 9
Cress, doz. punnets 1 6—	— bushel 1 6-2 0
Cucumbers, doz. 8 0-20 0	Salsafy, bunch 0 3-0 4
Endive, new French, per dozen 1 3—	Tomatoes, English, new, per 12 lb. 4 6-5 0
— English, score 1 0—	— Canary deeps 2 6-3 6
Garlic, new, lb. 0 3—	Turnips, per dozen 1 6-2 0
Horseradish, English, bundle 1 6-2 0	— in bags 1 6-2 0
— foreign, v. bdl. 0 9-1 0	Watercress, p. doz. bunches 0 4-0 6
— loose, per doz. 1 9—	

REMARKS.—As was anticipated, the price of Brussels Sprouts advanced on Monday to 2s. 6d. The demand for green Vegetables was keen, and the market was cleared out. Roots, Apples, and Fruits generally remain at about last week's prices.

POTATOS.

Various sorts, 80s. to 100s. per ton; foreign bags, 50 kilo., 2s. to 4s. 6d.; Dunbars, 120s. to 130s. John Bath, 32 & 34, Wellington Street, Covent Garden.

FRUIT AND VEGETABLES.

GLASGOW: December 26.—The following are the averages of the prices recorded since our last report:—Apples, Canadian Kings, 22s. to 26s. per barrel; Baldwins, Spies, Greenings, Russets, &c., 16s. to 21s. do.; United States, various varieties, 16s. to 20s. do.; Maine and Boston Apples, various varieties, 14s. to 20s. do.; Californian Newton Pippins, 4's, 8s. 6d. to 9s. 6d. per case; 5's, 7s. 6d. to 8s. do.; Bananas, extra, 12s. to 13s. per bunch; No. 1, 10s. to 11s. do.; No. 2, 8s. to 9s. do.; Pears, Easter Beurre, single layers, 5s. to 6s. per crate; Californian Pears, various sorts, 13s. to 16s. per case; Oranges, Valencia, ordinary, 420's, stamped papers, 9s. to 9s. 6d. per box; do., plain papers, 8s. 3d. to 9s.; large 420's, stamped papers, 12s. to 12s. 6d. do.; plain papers, 11s. to 12s.; extra large 420's, stamped papers, 13s. to 15s.; do., plain papers, 13s. to 14s.; large and extra large 714's, 12s. to 13s. per case; Lemons, Messina, 10s. to 14s. do.; Grapes, English, new, 1s. to 2s. per lb.; Tomatoes, Canary deeps, finest mediums, 5s. 3d. to 5s. 9d. per box; others, 3s. to 4s. do.; Mushrooms, 1s. to 1s. 3d. per lb.; Onions, Valencia, 4's, 5s. 9d. to 6s. per case; 5's, 6s. 3d. to 6s. 6d.

LIVERPOOL: December 26.—Wholesale Vegetable Market. The Christmas market was of the usual description; full supplies meeting with a good demand at, in most cases, satisfactory prices. The weather had its influence on the supply of vegetables of all descriptions, and a large clearance was effected in all kinds of foreign fruits; also in high-class home produce.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending December 22, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.	1900.	Difference.
	s. d.	s. d.	s. d.
Wheat	25 6	26 7	+ 1 1
Barley	25 10	25 7	- 0 3
Oats	16 0	17 2	+ 1 2

CATALOGUES RECEIVED.

SEEDS, BULBS, ETC.

WM. LAING, Sutton, Surrey.
W. J. WATSON, LTD., Town Hall Buildings, Newcastle-on-Tyne.
WM. PAUL & SON, Waltham Cross, Herts.
OTTO PUTZ, Erfurt, Germany.
COOPER, TABER & CO. LTD., 90 & 92, Southwark Street, London, S.E., and Witham, Essex.

DICKSON & ROBINSON, Old Millgate, Manchester.

POPE & SONS, King's Norton, Birmingham.

JOHANNES RAFF, Copenhagen—Conifers, European, West Asiatic, North African, Japanese, East Asiatic, and American; also Deciduous Trees and Shrubs.

CHRYSANTHEMUMS.

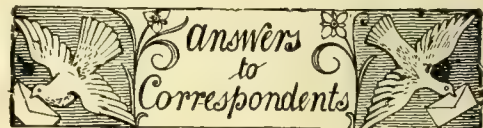
C. E. & F. W. LILLEY, LTD., St. Peter's-in-the-Wood, Guernsey.

GARDENING APPOINTMENT.

Mr. J. FARQUHARSON has taken charge of the gardens of R. O. LAMB, Esq., Stoke House, Hayton, Carlisle, and will undertake the new work to be carried on thereat.

TRADE NOTICE.

MR. ALEXANDER CROSS, formerly with Messrs. J. Picard & Co., has joined the staff of the Seed Department of W. H. & H. Le May, Seed Factors, 67, Borough High Street, London, S.E., and Seed Market, Mark Lane.



CONES OF ABIES NOBILIS: J. P. The cones mature in one year.

NAMES OF FRUITS: We are most desirous to oblige our correspondents as far as we can consistently with our editorial work, but as the naming entails much labour and considerable cost, we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones; if two of each variety are sent, identification will be easier. They should be just approaching ripeness, and they should be properly numbered, and carefully packed. A leaf or shoot of each variety is helpful, and in the case of Plums, absolutely essential. In all cases it is necessary to know the district from which the fruits are sent. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay is often unavoidable.—J. A. F. 1, Both fruits were rotten; 2, Triomphe de Jodoigne. Correspondents have been repeatedly desired not to affix the number-labels to the eyes of the fruits sent for name. The characters furnished by this part of the fruit in conjunction with others, often enable closely related varieties to be distinguished.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—J. F. Garden variety of Violet.

TWELVE FINE MODERN JAPANESE VARIETIES OF CHRYSANTEMUMS: Chad. Florence Molyneux, Mrs. Mease, Nellie Pockett, Soleil d'Octobre, Miss Weller, M. Chénon de Leché, Australie, General Buller, Madame Carnot, M. Hoste, Mrs. G. Carpenter, Mrs. G. Mileham. Several of the raisers, such as H. J. Jones, W. J. Godfrey, Jno. Green, R. Owen, Messrs. Cannell & Sons, have exhibited some fine novelties this year, but we are unaware that these will be purchasable in 1901.

COMMUNICATIONS RECEIVED.—M. D., no charge for such announcements.—S. W. F.—W. A. C.—A. C. F.—W. M.—Attwood & Binstead—J. C. F.—C. H.—E. M.—J. O. B.—W. R.—H. J. C.—A. P.—W. J. C.—J. Taylor—J. L.—W. G.—Madame de la Devansaye—D. T. F.—J. L.—Louis Gentil, with many acknowledgments—A. de Smet, Ghent—H. Dauthenay, Paris—Rev. H. F.—F. C. H., Erfurt—C. B. H.—W. C.—M. M. Vilmoren & Cie.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



WEeping BEECH IN THE NURSERY OF R. SMITH & Co., WORCESTER.

